OTAY BUSINESS PARK

BIOLOGICAL TECHNICAL REPORT
TM 5505

June 23, 2010

Prepared for the County of San Diego

Project Proponent :

PARAGON MANAGEMENT COMPANY, LLC
4225 Executive Square, Suite 920
La Jolla, California 92037

Prepared by :

HELIX ENVIRONMENTAL PLANNING, INC.
7578 El Cajon Boulevard, Suite 200
La Mesa, California 91942-4646

Greg Mason
Vice President
and County-approved Biological Consultant

Stacy Nigro
Biologist

Otay Business Park
Biological Technical Report

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

amsl	above mean sea level
BMO	Biological Mitigation Ordinance
BRCA	Biological Resource Core Area
CDFG	California Department of Fish and Game
DG	decomposed granite
NCCP	Natural Community Conservation Planning
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
County	County of San Diego
DG	Decomposed granite
EOMSP	East Otay Mesa Specific Plan
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report
HELIX	HELIX Environmental Planning, Inc.
Lonestar Parcels	Lonestar Ranch Property
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
NEPA	National Environmental Policy Act
NPPA	Native Plant Protection Act
OBP	Otay Business Park, LLC
RPO	Resource Protection Ordinance
SR	State Route
USFWS	U.S. Fish and Wildlife Service

SUMMARY OF FINDINGS

The proposed Otay Business Park project is an industrial business park development located on 161.6 acres in Subarea 2 of the East Otay Mesa Specific Plan (EOMSP) in San Diego County. HELIX Environmental Planning, Inc. (HELIX) conducted a number of biological surveys of the project site in 2000 and 2001 as part of the proposed State Route (SR-) 11 project. Fieldwork conducted on site in association with the SR-11 project include a general biological survey and vegetation mapping, rare plant surveys, a jurisdictional delineation, and focused surveys for fairy shrimp and burrowing owls (*Athene cunicularia*). Additionally, EDAW biologists conducted protocol Quino checkerspot butterfly (*Euphydryas editha quino*) surveys in 2001. Updated vegetation mapping and rare plant surveys were conducted by HELIX biologists in 2005 and updated Quino checkerspot butterfly surveys were conducted by HELIX biologists in 2008. Updated vernal pool and fairy shrimp surveys of the project site were conducted by HELIX biologists in 2008 and 2009.

EXISTING CONDITIONS

Vegetation communities occurring on the project site include vernal pools (10 total), saltgrass grassland, non-native grassland, road pools (13 total), disturbed habitat, and developed land. Vernal pool, saltgrass grassland, and non-native grassland are considered sensitive communities. Vegetation communities mapped in off site improvement areas include vernal pools, freshwater marsh, non-native grassland, road pools, disturbed habitat, and developed land

A total of 0.46 acre of U.S. Army Corps of Engineers (Corps) jurisdictional areas were mapped on site: 0.20 acre of non-wetland Waters of the U.S., 0.21 acre of vernal pools, and 0.05 acre of road pools. Approximately 0.05 acre of road pools were also mapped within the off-site road improvement areas. California Department of Fish and Game (CDFG) jurisdictional areas on site include 0.19 acre of streambed and 0.01 acre of ephemeral pond. No County of San Diego (County) Resource Protection Ordinance (RPO) wetlands occur on site or in the off-site road improvement areas. The vernal pools on site do not meet the definition of RPO wetlands.

Eight sensitive plant species were detected on site: small-flowered morning-glory (*Convolvulus simulans*), variegated dudleya (*Dudleya variegata*), San Diego button-celery (*Eryngium aristulatum* ssp. *parishii*), San Diego barrel cactus (*Ferocactus viridescens*), chocolate lily (*Fritillaria biflora*), San Diego marsh-elder (*Iva hayesiana*), spreading navarretia (*Navarretia fossalis*), and one location supporting ashy spike-moss (*Selaginella cinerascens*). Additionally, 11 sensitive animal species were observed on site during project-related biological surveys: San Diego fairy shrimp (*Branchinecta sandiegonensis*), Quino checkerspot butterfly, Riverside fairy shrimp (*Streptocephalus woottoni*), western spadefoot toad (*Spea hammondii*), grasshopper sparrow (*Ammodramus savannarum*), golden eagle (*Aquila chrysaetos*), burrowing owl, northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), California horned lark (*Eremophila alpestris actia*), and loggerhead shrike (*Lanius ludovicianus*). The San Diego fairy shrimp was detected within one of the vernal pools and nine road pools, while Riverside fairy shrimp was detected in one vernal pool and two road pools. Additionally, 114.4 acres of the site (approximately 71 percent) lies within Critical Habitat for the San Diego fairy shrimp. Critical Habitat does not occur in the northern portion of the site. The project site lies within the territory

of a golden eagle pair known to nest in O'Neal Canyon approximately 1.75 miles northeast of the project site. Additionally a single two-striped garter snake (*Thamnophis hammondii*) was observed just off site to the north.

IMPACTS

Proposed project development would impact 175.31 acres, including 158.29 acres of the project and 17.01 acres off site. In total, the project applicant proposes impacts to 0.14 acre of vernal pool, 0.01 acre of freshwater marsh, 0.19 acre of saltgrass grassland, 163.41 acres of non-native grassland, 0.10 acre of road pools occupied by endangered fairy shrimp, 10.19 acres of disturbed habitat, and 1.27 acres of developed land. These impacts assume that the proposed project moves forward as a stand-alone project, independent of adjacent proposed development (i.e, the Otay Crossings project). If the both the proposed project and Otay Crossings project go forward, the overlap of non-native grassland impacts and native grassland impacts would be shared between the two projects, and the resulting mitigation obligation would be split between the two parties. The overlap of native grassland would be 0.1 acre, while the overlap of non-native grassland would depend on the Sewer Option selected by Otay Crossings. Sewer Option A would result in 18.02 acres of non-native grassland overlap and Sewer Options B1 and B2 each would result in 21.94 acres of non-native grassland overlap. Sewer Option A is the option preferred by Otay Crossings.

Impacts to on- and off-site Corps jurisdictional areas would include 0.19 acre of non-wetland Waters of the U.S., 0.14 acre of vernal pools, and 0.10 acre of road pools occupied by endangered fairy shrimp. Impacts to CDFG jurisdictional areas would occur to 0.19 acre of streambed and 0.01 acre of ephemeral pond. County RPO wetlands would not be impacted, as none are present within the project site or off site impact areas.

All the sensitive plants recorded on the project site would be impacted by the proposed development, including small-flowered morning-glory (5 individuals), variegated dudleya (approximately 3,465 individuals), San Diego button-celery (3 individuals), San Diego barrel cactus (31 individuals), chocolate lily (4 individuals), San Diego marsh-elder (11 individuals), spreading navarretia (3 individuals), and ashy spike-moss.

The project applicant proposes to impact all of the sensitive animal species recorded on the project site, including San Diego fairy shrimp, Quino checkerspot butterfly (1 individual observed in 2005), Riverside fairy shrimp, western spadefoot toad (3 individuals on site and 1 off site), grasshopper sparrow (1 individual), golden eagle (foraging habitat), burrowing owl (7 pairs and 163.60 acres of occupied habitat), northern harrier (1 individual), white-tailed kite (1 individual), California horned lark (1 individual on site and 1 off site), and loggerhead shrike (1 individual).

Indirect impacts caused by project-related construction activities may occur. Potential indirect impacts associated with fugitive dust, construction noise, errant construction impacts, water quality, human activity, nuisance animal species, and night lighting would all be considered less than significant provided the following measures are implemented:

- Fugitive dust: Active construction areas and unpaved surfaces would be watered pursuant to County grading permit requirements to minimize dust generation;
- Construction noise: All brushing, grading, and clearing of vegetation shall take place outside of the bird breeding season (February 15 through August 31). No construction activities may occur within 300 feet of burrowing owl burrows or within 800 feet of ground-dwelling raptor nests until a qualified biologist determines that they are no longer active or it is determined that noise levels would not exceed 60 dB L_{eq} at the nest site;
- Errant construction impacts: Prior to the start of construction, orange construction fencing would be installed within the proposed limits of impact to clearly define the grading boundaries and prevent unintended impacts;
- Water quality: To prevent impacts to water quality, the project would comply with San Diego County Zoning, Storm Water, and Land Use regulations. Project design would implement erosion, sedimentation, and pollution control measures that would prevent a reduction in water quality in off-site streams and wetlands;
- Human activity: Project development consists of an industrial park, which is not anticipated to result in increases in human activity in adjacent undeveloped areas. Furthermore, on-site open space areas would be fenced, as would off-site restoration areas;
- Nuisance animal species: Nuisance animal species, particularly domestic cats, are known to impact native wildlife. Because the project is an industrial development rather than a residential development, impacts from nuisance animals are not expected; and
- Night lighting: All construction and security lighting would be shielded or directed away from any adjacent open space, therefore not impacting off-site habitat.

Potentially significant indirect impacts associated with the proposed project include animal behavioral changes and introduction of non-native plant species into the adjacent habitat.

Given the heavy development pressure throughout East Otay Mesa, the project has potential to contribute to cumulatively significant impacts to sensitive vegetation communities and species. The impacts include a substantial loss of grasslands (native and non-native), raptor foraging habitat, and burrowing owls. Per the EOMSP Final Environmental Impact Report (FEIR [County 1994]), impact to non-native grassland constitutes a significant cumulative impact due to loss of raptor foraging habitat.

MITIGATION

The project applicant proposes to mitigate for impacts to sensitive vegetation communities, jurisdictional areas, and sensitive plants and animals with a combination of on- and off-site preservation and restoration. Two mitigation parcels, totaling 68.72 acres of contiguous habitat would be acquired at the Lonestar Ranch Property (Lonestar Parcels) located within the City of San Diego just east of State Route (SR) 125 and north of Lonestar Road. Up to an additional 9.2 acres of land would be acquired, as necessary, from the Otay Crossings Lonestar parcels to achieve an overall target mitigation ratio of approximately 1:1 for grassland impacts. The Lonestar parcels are approximately 3 miles northwest of the project site within the same Otay Mesa burrowing owl sub-population as the project site. All of the habitat on the Lonestar Parcels supports or has potential to support burrowing owls: non-native grassland, vernal pools, road pools with fairy shrimp, and Diegan coastal sage scrub. The remaining mitigation lands would

be acquired off Otay Mesa at a location approved by the County, U.S. Fish and Wildlife Service (USFWS), and CDFG. If the off-mesa mitigation site occurs outside the Subarea Plan, an amendment to the Subarea Plan may be required. Since the project is required to complete a minor amendment to be included in the MSCP, the off-mesa mitigation site could be included in the amendment process to be included within the Subarea Plan. This process would follow the procedure laid out in Section 4.7 of the Subarea Plan and require the concurrence of the wildlife agencies.

The selected mitigation site(s) off East Otay Mesa would have the following characteristics:

- Support a sufficient acreage of grassland to meet the project requirements;
- Support or contain suitable habitat over the entire site to support burrowing owls;
- Be free of encumbrances that would preclude a conservation easement;
- Contribute to the long-term persistence of sensitive biological resources in the region; and
- Provide suitable habitat for multiple resources, including sensitive plant species, which could be transplanted or restored, if necessary.

MITIGATION FOR IMPACTS TO VEGETATION COMMUNITIES (Acres)

VEGETATION COMMUNITY	IMPACTS	TARGET RATIO	PROPOSED MITIGATION		
			On Mesa	Off Mesa	Total
Vernal/Road pool	0.24	3:1	1.07[1]	0.00	1.07
Freshwater marsh	0.01	3:1	0.00	0.03	0.03
Saltgrass grassland	0.19	2:1	0.38[2]	0.00	0.38
Non-native grassland	163.41	1:1	79.45[3]	81.70	161.15
Disturbed habitat	10.19	--	--	--	--
Developed	1.27	--	--	--	--
TOTAL	**175.31**	**--**	**80.90**	**81.73**	**162.63**

[1] Off site at the 68.72-acre Lonestar Parcels. Includes 0.66 acre of vernal pool preservation and 0.41 acre of vernal pool restoration.

[2] Off site at the 68.72-acre Lonestar Parcels

[3] Includes 2.98 acres on site, 67.27 acres off site at the Lonestar Parcels (reached by subtracting 0.38 acre of native grassland restoration and 1.07 acre vernal pool preservation/restoration from the 68.72-acre parcels), and up to 9.2 acres of land to be acquired from the Otay Crossings mitigation parcel at Lonestar.

Mitigation for impacts to vernal pools and road pools supporting fairy shrimp would occur off site with preservation of 0.66 acre of vernal pools and creation/restoration of 0.41 acre of vernal pools at the Lonestar Parcels. Impacts to freshwater marsh would be mitigated through purchase of credit from the Rancho Jamul mitigation bank.

Impacts to saltgrass grassland and non-native grassland would be mitigated together with a combination of restoration and preservation. Mitigation for impacts to saltgrass grassland would occur on mesa at a 2:1 mitigation ratio (0.38 acre). Mitigation for impacts to non-native

grassland would target an approximately 1:1 ratio (161.15 acres). The mitigation program approved by the County and wildlife agencies requires at least half of the non-native grassland mitigation to occur on Otay Mesa (on mesa) and allows the rest to occur off of Otay Mesa (off mesa). As a result, the non-native grassland mitigation would be split, with approximately 79.45 acres occurring on mesa and approximately 81.70 acres off mesa, for a total of 161.15 acres of non-native grassland mitigation.

On mesa grassland mitigation for the stand-alone proposed project would occur with the following:

- 2.98 acres of habitat in the southeastern corner of the Otay Business Park site. An existing drainage channel will be realigned through this area and seeded with grassland species. Developed habitat in this area consists of decomposed granite (DG) spread out over an existing dirt road. The DG will be removed and the underlying area will be allowed to revegetate as non-native grassland. Disturbed habitat will remain as is. The northern portion of the channel, as well as areas where riprap is proposed, are not included in the 2.98 acre area.
- 67.65 acres of grassland mitigation would be achieved with the preservation and restoration of habitat within the Lonestar Parcels (including 0.38 acre of native grassland restoration and 67.27 acre of non-native grassland mitigation).

The above on mesa mitigation for non-native grassland totals 70.25 acres (on site and Lonestar). Up to an additional 9.2 acres of grassland mitigation would be acquired from the Otay Crossings portion of the Lonestar parcel in order to reach an approximately 0.5:1 on mesa mitigation ratio. In addition to the on mesa mitigation, approximately 81.70 acres of grassland mitigation would be achieved off mesa at a location approved by the County, USFWS, and CDFG.

Implementation of these measures would provide approximately 79.45 acres of non-native grassland mitigation on mesa and approximately 81.70 acres of non-native grassland mitigation off mesa. Thus, the overall mitigation ratio for non-native grassland impacts for the proposed project is 0.99:1 (approximately 1:1). The mitigation proposed assumes that the proposed project moves forward as a stand-alone project.

If both the proposed project and adjacent Otay Crossings project go forward, the overlap of non-native grassland impacts and native grassland impacts would be shared between the two projects, and the resulting mitigation obligation would be split between the two parties. The overlap of native grassland would be 0.1 acre, while the overlap of non-native grassland would depend on the Sewer Option selected by Otay Crossings. Sewer Option A would result in 18.02 acres of non-native grassland overlap. Sewer Options B1 and B2 each would result in 21.94 acres of non-native grassland overlap. Sewer Option A is the preferred option for the Otay Crossings project and is further discussed below. A total of 196.65 acres of on mesa non-native grassland mitigation is available for the proposed project and the Otay Crossings project combined. This includes 70.25 acres for the proposed project (2.98 acres on site and 67.27 acres at Lonestar) and 126.4 acres for Otay Crossings (44.4 acres on site and 82 acres at Lonestar). The total combined non-native grassland impacts are 408.78 acres for Sewer Option A. To reach 0.5:1 non-native grassland mitigation on mesa, a total of 204.39 acres would be needed. The combined projects would result in an overall combined on mesa mitigation ratio of 0.48:1 for the two projects. If the Otay Crossings project is constructed prior to the proposed project, mitigation shall not be required of the proposed project for those overlapping areas already impacted by Otay Crossings.

Impacts to jurisdictional drainages would be mitigated at a 1:1 ratio (0.19 acre) within the realigned drainage channel on-site. Impacts to vernal pools and road pools would be mitigated at the Lonestar Parcel with 1.07 acres of vernal pool preservation and creation/restoration (0.66 acre of preservation and creation/restoration of 0.41 acre). In addition, approximately 4.50 acres of vernal pool watersheds also would be restored.

The project applicant proposes to mitigate impacts to variegated dudleya, San Diego button-celery, spreading navarretia, and San Diego barrel cactus through the salvage and translocation of the on-site populations to the vernal pool creation/restoration on the Lonestar Parcels. The salvaged plants would be translocated to the Lonestar Parcels and incorporated into the vernal pool and vernal pool watershed creation and restoration effort. Variegated dudleya, San Diego button-celery, and San Diego barrel cactus have all been reported in grassland habitat on or adjacent the Lonestar Parcels (HELIX 2009), so the habitat in these areas would be appropriate to support the translocated plants. San Diego marsh-elder would be salvaged and translocated to the slopes of the realigned drainage channel on site. A Sensitive Species Translocation Plan has been prepared and will be submitted to the County for approval prior to issuance of any grading permit. Chocolate lily is only present in very small numbers within the project site, and occurs in larger numbers on the Lonestar Parcels; therefore mitigation for impacts to this species would be achieved by preservation of habitat on the Lonestar Parcels.

The project applicant proposes to mitigate impacts to pools supporting San Diego and Riverside fairy shrimp at a 3:1 ratio in conjunction with that for vernal and road pools. A minimum of 0.72 acre of the created and restored vernal pools would be inoculated with San Diego and Riverside fairy shrimp. The Lonestar Parcels contain 68.72 acres of vegetation (mostly non-native grassland) designated as San Diego Fairy Shrimp Critical Habitat. The total mitigation (1.07 acre) would be 0.35 acre more than that required to meet a 3:1 mitigation ratio. Additionally, the mitigation program includes restoration of approximately 4.5 acres of vernal pool watersheds, of which 0.38 acre would be mitigation for native grassland (saltgrass grassland) impacts and the remainder would be mitigation for impacts to non-native grassland.

All of the saltgrass (0.19 acre) and non-native grassland (152.82 acres) on the project site is considered occupied by burrowing owls; proposed impacts to burrowing owl occupied habitat, including off site impacts, would total 163.60 acres. Impacts to occupied habitat would be mitigated at an approximate 1:1 ratio with preservation of habitat on site, as well as preservation of habitat off site at the Lonestar Parcels, in addition to off Otay Mesa at an approved mitigation site. Additionally, artificial owl burrows will be installed as part of the vernal pool watershed restoration effort on the Lonestar Parcels. This will provide burrow locations within a preserve area for owls to occupy and help offset the loss of owl habitat on the project site. No grading may occur in occupied habitat during the burrowing owl breeding season (February 15 through August 15). Prior to grading, a pre-construction survey would be conducted and any owls observed would be passively relocated in accordance with CDFG regulations.

Impacts to western spadefoot toad, grasshopper sparrow, golden eagle, northern harrier, white-tailed kite, California horned lark, and loggerhead shrike would not require species-based mitigation; however, required mitigation for non-native grassland and burrowing owls would preserve habitat areas for these species as well.

If construction must occur during the bird breeding season (February 15 to August 31), no activity may occur within 300 feet of occupied burrowing owl burrows or within 800 feet of active ground dwelling raptor nests until they are no longer active or it is determined that noise levels would not exceed 60 dB L_{eq} at the nest site. Alternatively, noise minimization measures such as noise barriers could be constructed to bring noise levels to below 60 dB L_{eq}, which will reduce impacts to below a level of significance. Potentially significant indirect impacts to water quality would be addressed through adherence to a storm water pollution prevention plan, which would address the requirement to minimize contaminants entering the waterways through reducing erosion, controlling sedimentation, and prevention spill of toxins.

THIS PAGE INTENTIONALLY LEFT BLANK

1.0 INTRODUCTION

Biological investigations of the Otay Business Park project site were performed at the request of Otay Business Park, LLC (OBP) by HELIX Environmental Planning, Inc (HELIX). This report describes existing biological conditions and evaluates proposed biological impacts and mitigation associated with development of the 161.60-acre Otay Business Park project site. This information provides the project applicant, County of San Diego (County), U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and the public with current biological data to satisfy review of the proposed project under the California Environmental Quality Act (CEQA) and other federal, state, and County regulations.

1.1 PROJECT LOCATION

The project site (Assessor's Parcel Number 648-070-21) and adjacent off-site improvements are located in southeastern Otay Mesa within San Diego County (Figure 1). The property lies immediately north of the U.S./Mexico border approximately 0.5 mile east of Enrico Fermi Drive. It occupies the southeastern quadrant of Section 31 within Township 18 South, Range 1 East of the U.S. Geological Survey 7.5-minute Otay Mesa quadrangle (Figure 2). The site is within the East Otay Mesa Specific Plan (EOMSP) area and is within areas designated in the County's Multiple Species Conservation Program (MSCP; County 1997) as Minor Amendment Areas and Minor Amendment Areas Subject to Special Consideration.

1.2 SITE PHYSIOGRAPHY AND LAND USES

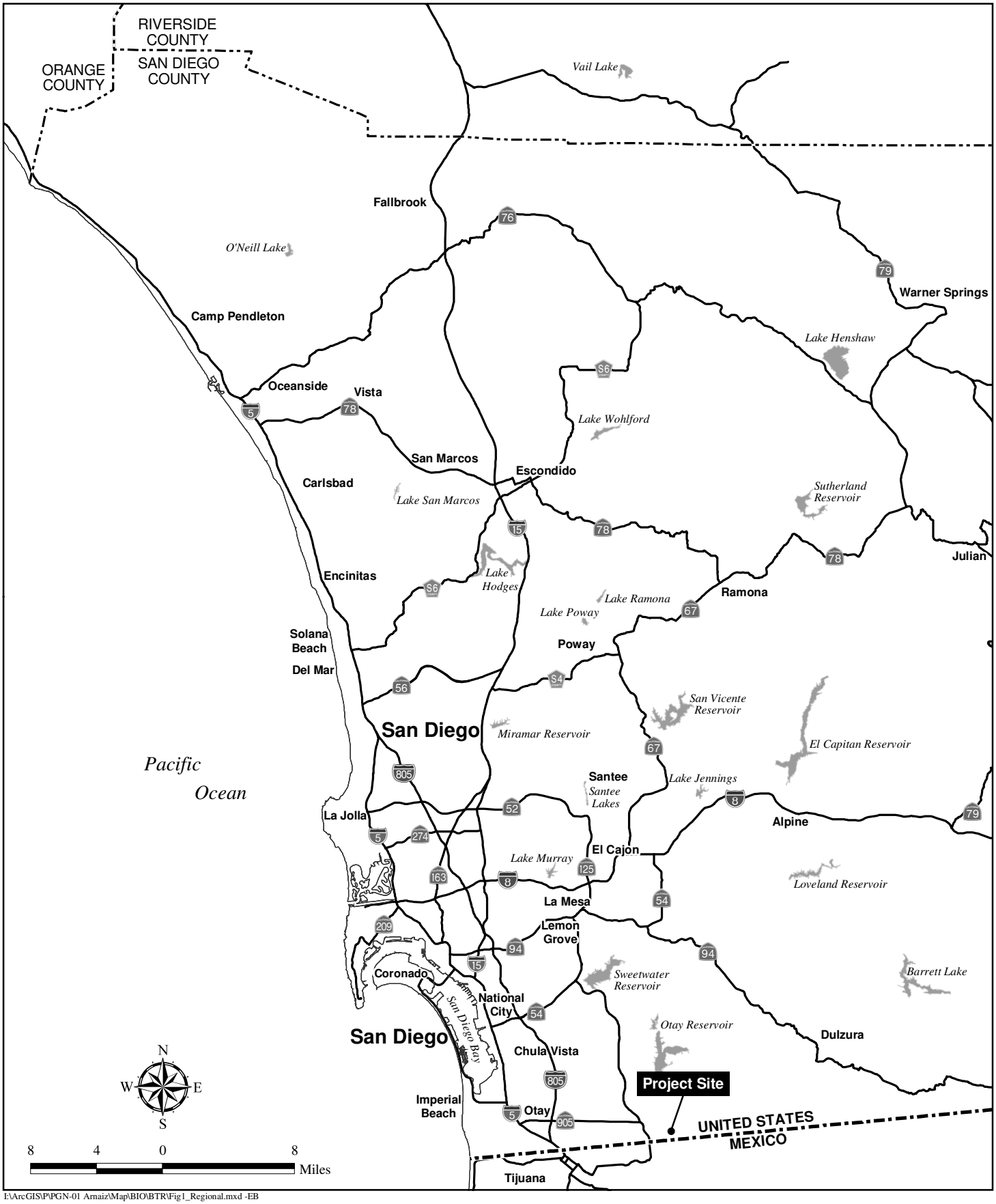
Topography on the roughly square-shaped project site is largely flat, with generally higher elevations in the northern portion of the site. Two low hills extend north from the southern property boundary. The larger of the hills extends north from the central portion of the southern boundary and contains a number of mima mounds. A single north-south drainage runs through the eastern portion of the site and exits the property between the two hills. Elevations on site range from approximately 510 feet above mean sea level (amsl) within the drainage as it crosses the southern boundary, to 560 feet amsl along the northern boundary.

Soils underlying the western portion of the site are largely Salinas clay, and those underlying much of the northern and northeastern portions of the site are Diablo clay, while those underlying the hills in the southern portion of the site are Huerhuero loams (Bowman 1973).

The project site is currently undeveloped; however, a number of dirt roads traverse the site and appear to be regularly used by the U.S. Border Patrol. Surrounding land uses include industrial public uses to the west, and a mix of industrial, airport, commercial, and residential uses across the southern border in Mexico. Undeveloped land exists to the north and east extending to the San Ysidro Mountains.

1.3 PROJECT DESCRIPTION

The proposed project is an industrial business park to be built on a parcel designated in the EOMSP for Mixed Industrial use (County 1994). The proposed project would divide the site into



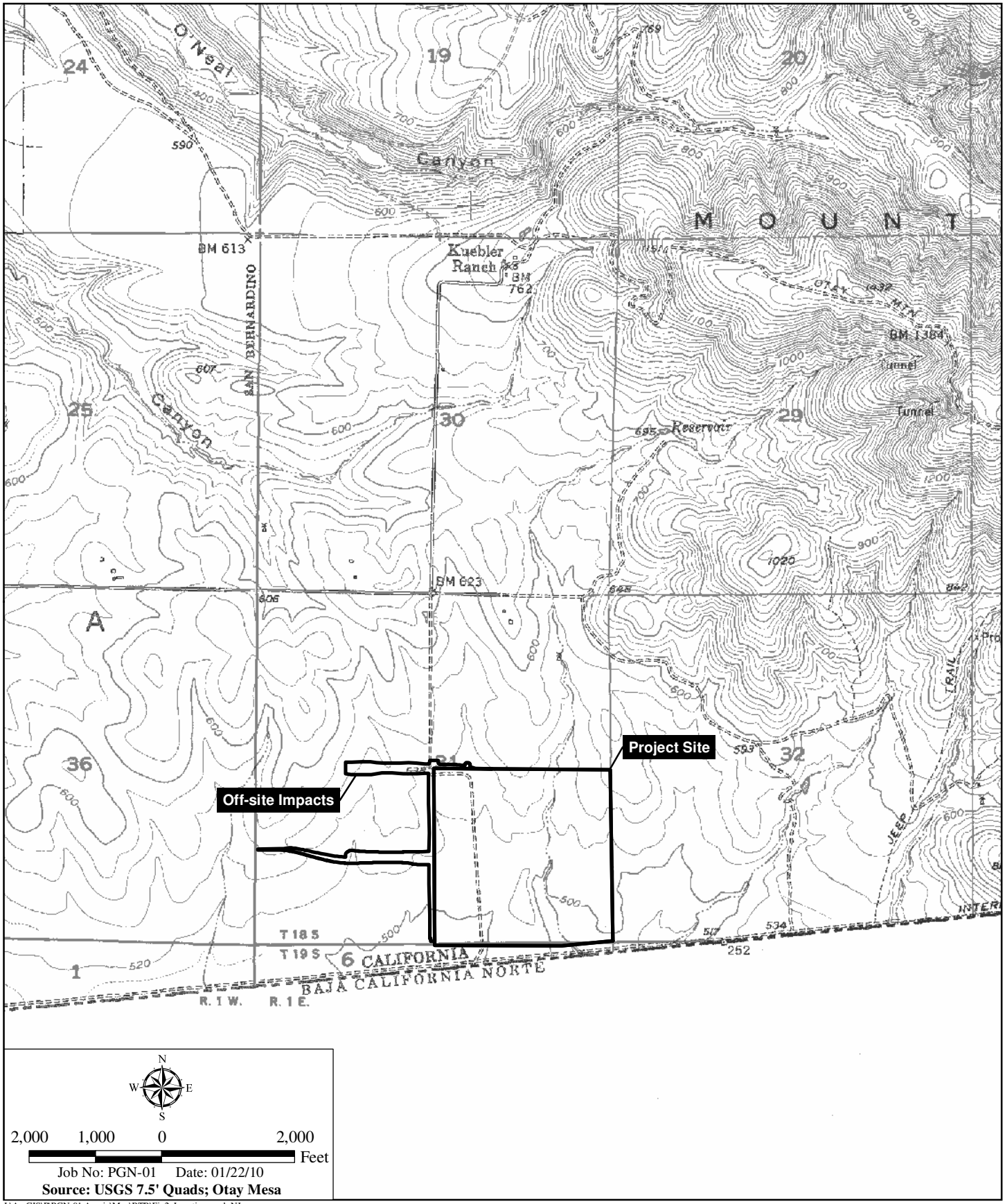
I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig1_Regional.mxd -EB

Regional Location Map

OTAY BUSINESS PARK

HELIX

Figure 1



I:\ArcGIS\P\PGN-01 Arnaiz\Map\BTR\Fig2_Location.mxd -NJ

Project Location Map

OTAY BUSINESS PARK

HELIX

Figure 2

59 industrial lots on approximately 116.4 acres, two detention basin lots (Detention Basins A and B), on approximately 6.61 acres, a 1-acre lot set aside for a sewer pump station, and approximately 8.9 acres provided as open space to accommodate a realigned drainage channel through the site. Proposed lot sizes range from 0.9 acre to 5.0 acres. The precise nature of land uses on the site would be identified in the future as tenants for individual lots are identified, but in all cases the land uses proposed on the site would be consistent with the site's zoning as specified by the EOMSP, Subarea 2. Although the project would be build in phases, mass grading would all occur during the first phase.

Implementation of the proposed project would require improvements to roadways, both on- and off-site. Proposed off-site improvements to Siempre Viva Road would extend the roadway approximately 1,330 feet westerly of the proposed project site to the existing improved segment of the roadway, and would then continue approximately 1,300 feet along the existing roadway to Enrico Fermi Drive. Proposed off-site improvements to Airway Road would include improvements along a portion of the northern boundary of the site, and the extension of the roadway approximately 1,300 feet westerly of the proposed project site to the existing improved segment of the roadway. Roadway facilities proposed on-site include portions of Airway Road, Siempre Viva Road, and proposed Genesis Road, Paragon Road, and Enterprise Road.

Two existing drainage channels on site would be realigned or re-routed as part of the proposed project. The western drainage course would be re-routed underground via the project's internal storm drain system. Drainage from the western portions of the site would be directed towards Detention Basin A, where it would be detained prior to being discharged towards the south. The eastern drainage channel would be re-aligned and preserved as an open, soft-bottomed channel. The soft-bottomed drainage channel would route runoff flows from the eastern portion of the project and discharge flows to the south. Runoff from the eastern portions of the site proposed for development would enter into the project's storm drain system and routed to Detention Basin B, where it would be detained prior to being discharged towards the south in a manner that closely resembles the flows that occur under existing conditions. All storm water runoff and existing flows through the site ultimately discharge towards the south where the flows combine with existing flows within the Tijuana River.

2.0 METHODS

Focused biological surveys of the project site were conducted by HELIX in 2004 and 2005, but rigorous investigations of the proposed State Route (SR-) 11 study area, which includes the project site, have been ongoing since 2000. Surveys conducted in association with the proposed SR-11 project include HELIX surveys in 2000 and 2001, URS surveys in 2005, and updated HELIX surveys conducted between 2006 and 2009. The SR-11 study area extends from Otay Mesa Road in the north to the international border in the south and from Enrico Fermi Road in the west into the foothills of the San Ysidro Mountains in the east. Biological surveys conducted on site since 2000 include general plant and animal surveys, vegetation mapping, and jurisdictional delineations as well as focused surveys for rare plants, Quino checkerspot butterfly (*Euphydryas editha quino*), San Diego and Riverside fairy shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*, respectively), and burrowing owls (*Athene cunicularia*).

2.1 GENERAL BIOLOGICAL SURVEY

General biological surveys including the project site were conducted by HELIX biologists in 2004 according to the schedule in Table 1a; surveys conducted in association with the SR-11 project are discussed in the Existing Conditions Report (HELIX 2002) and Natural Environment Study (URS 2005). Vegetation was mapped on a 1"=200' scale topographic map of the site with the aid of an aerial photograph. The entire site was surveyed on foot with the aid of binoculars and all detected plant and animal species were recorded. Animal identifications were made in the field by direct, visual observation or indirectly by detection of calls, burrows, tracks, or scat. All plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs. General biological data, including vegetation mapping and species inventories, have been updated opportunistically based on results of subsequent surveys.

Table 1a
GENERAL BIOLOGICAL SURVEY INFORMATION

DATE	PERSONNEL	SURVEY TYPE(S)
April 25, 2000	W. Larry Sward, Fred Sproul	General biological, vegetation mapping
April 26, 2000	Justin Fischbeck, W. Larry Sward	Jurisdictional delineation
April 28, 2000	Peter Allen, Greg Mason, W. Larry Sward	Jurisdictional delineation
October 24, 2000	W. Larry Sward	Vegetation mapping, jurisdictional delineation
January 5, 2004	Kathy Pettigrew, Dale Ritenour	Burrowing owl
June 11, 2004	Keli Balo	Vegetation mapping, sensitive species assessment
February 7, 2006	Stacy Nigro	Jurisdictional delineation

2.2 JURISDICTIONAL DELINEATION

A delineation of jurisdictional areas on the SR-11 project site was performed by HELIX on April 26, 28, and October 24, 2000 and was updated February 7, 2006 (Table 1a). All on-site areas with depressions or drainage channels were evaluated for the presence of U.S. Army Corps of Engineers (Corps), CDFG, and County jurisdictional wetlands as well as Waters of the U.S. and CDFG streambeds in accordance with current wetland delineation guidelines (Environmental Laboratory 1987; Studt 1991; Williams 1992). Wetland boundaries were determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987). Wetland affiliations of plant species follow USFWS (1996a). Wetland hydrology was evaluated by the presence of surface water, general drainage patterns, watermarks, drift lines, debris, soil texture, sediment deposits, and a positive FAC neutral test.

2.2.1 Corps Jurisdictional Areas

Corps wetlands are defined as areas that satisfy the three wetland criteria: vegetation, hydrology and soils. Corps jurisdictional non-wetland Waters of the U.S. exist in areas exhibiting hydrologic indicators but lacking sufficient hydrophytic vegetation and/or hydric soils indicators (Studt 1991; Environmental Laboratory 1997).

2.2.2 CDFG Jurisdictional Areas

Wetland boundaries under CDFG jurisdiction are identified by the presence of riparian vegetation and/or regular surface flow. A streambed under CDFG jurisdiction is defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (California Code of Regulations Title 14, Section 1.72). CDFG wetlands also include all riparian shrub or tree canopy and may extend beyond stream banks.

2.2.3 County Wetlands

The County Resource Protection Ordinance (RPO; County 2007) considers wetlands and wetland buffers to be sensitive habitats and regulates potential impacts to them. Wetlands are defined in the RPO as transitional lands between terrestrial and aquatic systems and must reflect one or more of the following attributes:

- At least periodically, the land supports predominantly hydrophytes (plants whose habitat is water or very wet places);
- The substratum is predominantly undrained hydric soil; or
- The substratum is nonsoil and is saturated with water or covered by water at some time during the growing season of each year.

Wetland buffers are defined in the RPO as areas that "provide a buffer area of an appropriate size to protect the environmental and functional habitat values of the wetland, or which are integrally important in supporting the full range of the wetland and adjacent upland biological community."

2.3 FOCUSED SURVEYS

2.3.1 Rare Plants

HELIX conducted initial rare plant surveys for the entire SR-11 study area on April 25 and May 24, 2000; updated rare plant surveys were conducted on June 27, 2005 (Table 1b). Rare plant surveys were conducted over the entire SR-11 study area by URS (2005) and again by HELIX (on the subject property on May 15, 2006). Rare plants investigated included those that are listed as threatened or endangered by the USFWS or the CDFG: those that are on the County Sensitive Plant List (provided in County 2007) and narrow endemic species with potential to occur on site. The entire site was traversed by foot and all habitat areas were inspected for the presence of rare plant species. When encountered, sensitive plants were counted and mapped on aerial photographs or topographic maps of the site.

Table 1b RARE PLANT SURVEY INFORMATION	
DATE	**PERSONNEL**
April, 25, 2000*	W. Larry Sward, Fred Sproul
May 24, 2000	Amy Mattson, W. Larry Sward, Sally Trnka
June 27, 2005	Keli Balo, Martina Pernicano
May 15, 2006	Dale Ritenour, Sally Trnka

*Conducted concurrently with the general biological survey and vegetation mapping

2.3.2 Burrowing Owl

Following CDFG (1995) survey guidelines, HELIX conducted initial burrowing owl surveys in 2000 and 2004, and update surveys were conducted during the breeding season in 2006 (Table 1c). The survey focused on areas with potential to support owl burrows or foraging habitat within the entire SR-11 study area as well as off-site areas within 500 feet (habitat within Mexico was not surveyed). Areas in the project vicinity supporting potential owl habitat include saltgrass grassland, non-native grassland, and disturbed areas where vegetation is sufficiently open to support burrows. Suitable habitat was examined with the aid of binoculars by walking approximately parallel transects, with particular attention paid to any areas along fence lines and where rodent activity was suspected.

Table 1c BURROWING OWL SURVEY INFORMATION			
DATE	**PERSONNEL**	**SURVEY TIME**	**WEATHER CONDITIONS**
June 16, 2000	Peter Allen, Justin Fischbeck, Scott Taylor	--	Overcast-clear, 63-78°F, wind 0-2 mph
January 5, 2004	Kathy Pettigrew, Dale Ritenour	1000-1300	Mostly clear-partly cloudy, 58-64˚F, wind 0-5 mph
June 14, 2006	Deborah Leonard, Kathy Pettigrew, Heather Haney, Jason Kurnow	0715-1130	Clear, 71-75°F, wind 2-8 mph
June 15, 2006	Deborah Leonard, Jason Kurnow Selby Howard	0715-1000	Clear, 72-75°F, wind 0-4 mph
June 21, 2006	Deborah Leonard, Kathy Pettigrew, Heather Haney, Shelby Howard	0700-1200	Overcast-clear 62-75°F, wind 0-4 mph
June 22, 2006	Deborah Leonard, Heather Haney, Jason Kurnow, Jasmine Watts	0715-1145	Overcast-clear, 63-74°F, wind 0-4 mph

2.3.3 Fairy Shrimp/Vernal Pool Surveys

Dry season fairy shrimp sampling was conducted for the entire SR-11 study area in July 2000 (HELIX 2000) by D. Christopher Rogers (Permit 795934) and Greg Mason and in September 2001 by Mr. Mason (Permit TE778195) in accordance with established USFWS protocol (1996b). Additional dry season sampling was conducted for the SR-11 study area in October 2008 and June 2009. Approximate depth, area, and habitat condition of each sampled basin was noted and recorded. Soil samples were prepared by dissolving in water and sieving through 787-, 355-, and 212-µm pore size screens to separate cysts from target fairy shrimp species. Any cysts observed were identified to genus level based on surface characteristics.

HELIX conducted wet season fairy shrimp surveys between January 18 and June 7, 2001 (HELIX 2001a and 2001b) and again during the 2004/2005 rainy season (Table 1d). Substrate samples were taken from all water-holding basins using fine mesh aquarium nets. Any fairy shrimp were identified in the field and immediately returned to their pool of origin. Care was taken to ensure that the nets were cleaned after each basin was sampled. Basin depth, area, water temperature, air temperature, habitat condition, and species present were noted and recorded. To accurately identify the boundaries and watersheds of all vernal pools and road pools on site, updated basin mapping was conducted by HELIX biologist Dale Ritenour on December 8, 2005. Updated wet season sampling was conducted for the SR-11 study area from December 2008 to March 2009.

Table 1d
FAIRY SHRIMP AND VERNAL POOL SURVEY INFORMATION

DATE(S)	PERSONNEL	SURVEY TYPE
July 6, 2000	Greg Mason, D. Christopher Rogers	Dry season fairy shrimp
January 18 to June 7, 2001	Ted Grantham, Renée Owens, W. Larry Sward, Sally Trnka	Wet season fairy shrimp basin mapping
September 26, 2001	Ted Grantham, Greg Mason	Dry season fairy shrimp
December 13, 2004	Dale Ritenour, W. Larry Sward	Wet season fairy shrimp
December 30, 2004	Keli Balo, Dale Ritenour	Wet season fairy shrimp
January 10, 2005	Keli Balo, Dale Ritenour	Wet season fairy shrimp
January 24, 2005	Keli Balo, Dale Ritenour	Wet season fairy shrimp
February 7, 2005	Keli Balo, Dale Ritenour	Wet season fairy shrimp
February 22, 2005	Keli Balo, Dale Ritenour	Wet season fairy shrimp
December 8, 2005	Dale Ritenour	Vernal pool basin mapping
March 29, 2006	Dale Ritenour, Jason Kurnow	Wet season fairy shrimp
April 11, 2006	Dale Ritenour, Jason Kurnow	Wet season fairy shrimp
April 25, 2006	Dale Ritenour, Jason Kurnow	Wet season fairy shrimp
May 11, 2006	Dale Ritenour, Jason Kurnow	Wet season fairy shrimp
May 24, 2006	Dale Ritenour, Jason Kurnow	Wet season fairy shrimp
July 11, 2006	Dale Ritenour, Jason Kurnow	Dry season fairy shrimp
October 27, 2008	Dale Ritenour, Jason Kurnow	Dry season fairy shrimp
Seven visits from December 16, 2008 to March 19, 2009	Jason Kurnow, Amy Mattson	Wet season fairy shrimp
June 22, 2009	Dale Ritenour, Amy Mattson	Dry season fairy shrimp

2.3.4 Quino Checkerspot Butterfly

Protocol (USFWS 2002a and b) surveys for the Quino checkerspot butterfly within the entire SR-11 study area were conducted by URS (2005) and HELIX (2006). Updated surveys of the Otay Business Park site were conducted in 2008 (HELIX 2008a). Surveys consisted of walking transects through appropriate habitat and identifying butterflies by sight and with the aid of binoculars. Larval host plants, including dwarf plantain (*Plantago erecta*) and purple owl's clover (*Castilleja exserta*), were mapped and potential nectar plants (e.g., common goldfields [*Lasthenia californica*] and popcorn flower [*Cryptantha* spp.]) were noted (Table 1e).

Table 1e
QUINO CHECKERSPOT BUTTERFLY SURVEY INFORMATION

DATE	PERSONNEL
April 12, 2006	Roger Ditrick, Alison Fischer, Robert Hogenauer, Deborah Leonard, Stacy Nigro, Kathy Pettigrew, Jasmine Watts
April 13, 2006	Roger Ditrick, Heather Haney, Deborah Leonard, Stacy Nigro, Kathy Pettigrew, Sally Trnka, Jasmine Watts
April 18, 2006	Doug Allen, Roger Ditrick, Alison Fischer, Amy Mattson, Stacy Nigro, Brian Parker, Kathy Pettigrew
April 19, 2006	Doug Allen, Roger Ditrick, Alison Fischer, Heather Haney, Amy Mattson, Brian Parker, Dale Ritenour
April 24, 2006	Doug Allen, Roger Ditrick, Heather Haney, Deborah Leonard, Amy Mattson, Kathy Pettigrew, Sally Trnka
April 29, 2006	Doug Allen, Roger Ditrick, Deborah Leonard, Stacy Nigro, Brian Parker, Kathy Pettigrew, Dale Ritenour
May 1, 2006	Alison Fischer, Heather Haney, Deborah Leonard, Brian Parker, Kathy Pettigrew, Sally Trnka, Jasmine Watts
May 7, 2006	Roger Ditrick, Heather Haney, Deborah Leonard, Amy Mattson, Brian Parker, Kathy Pettigrew, Jasmine Watts
May 9, 2006	Doug Allen, Heather Haney, Deborah Leonard, Amy Mattson, Stacy Nigro, Brian Parker, Dale Ritenour
May 10, 2006	Alison Fischer, Heather Haney, Deborah Leonard, Brian Parker, Kathy Pettigrew, Dale Ritenour, Sally Trnka
May 16, 2006	Doug Allen, Roger Ditrick, Alison Fischer, Deborah Leonard, Amy Mattson, Stacy Nigro, Kathy Pettigrew
May 17, 2006	Doug Allen, Roger Ditrick, Alison Fischer, Heather Haney, Amy Mattson, Stacy Nigro, Dale Ritenour
March 6, 2008	Doug Allen, Brian Parker, Dale Ritenour, Sally Trnka
March 17, 2008	Stacy Nigro, Brian Parker, Alison Varner, Jasmine Watts
March 21, 2008	Deborah Leonard, Amy Mattson, Stacy Nigro, Alison Varner
March 26, 2008	Amy Mattson, Stacy Nigro, Sally Trnka, Alison Varner
April 4, 2008	Stacy Nigro, Brian Parker, Sally Trnka, Alison Varner

2.4 NOMENCLATURE

Nomenclature used in this report comes from Holland (1986) and Oberbauer (1996) for vegetation communities, Hickman, ed. (1993) and Rebman and Simpson (2006) for plants, American Ornithologists' Union (1998) for birds, San Diego Natural History Museum (2002) for butterflies, Collins and Taggart (2002) for reptiles, and Baker et al. (2003) for mammals. Sensitive species status follows the California Natural Diversity Database (CDFG 2006a and 2006 b), California Native Plant Society ([CNPS] 2006), and/or County (2007).

3.0 RESULTS

3.1 VEGETATION COMMUNITIES

The project site supports six vegetation communities: vernal pools, saltgrass grassland, non-native grassland, road pools, disturbed habitat, and developed land (Figure 3; Table 2). For the purposes of this project, the study area is assumed to include the subject property and proposed off-site access roads. In addition to vegetation communities found on the project site, a small area of freshwater marsh is mapped in the area of off-site road improvements.

Table 2
VEGETATION COMMUNITIES
THAT OCCUR ON SITE

VEGETATION COMMUNITY*	AREA ON SITE†
Tier I‡	
Vernal pool (44000)	0.21
Saltgrass grassland (42130)	0.19
Tier III	
Non-native grassland (42200)	152.82
Tier IV	
Road pool (no code)	0.05
Disturbed habitat (11300)	8.06
Developed (12000)	0.27
TOTAL	**161.60**

*Numbers in parentheses represent Holland (1986) or Oberbauer (1996) vegetation community codes

†All areas are presented in acre(s) rounded to the nearest 0.01

‡One vegetation community occurs only off site: a small area (0.01 acre) of freshwater marsh (52400) occurs along the proposed extension of Siempre Viva Road.

LEGEND

Vegetation Communities

- Vernal Pool (44000)
- Saltgrass Grassland (42130)
- Non-native Grassland (42200)
- Disturbed Habitat (11300)
- Developed (12000)
- Freshwater Marsh -Disturbed (52400)
- Road Pool*

Sensitive Plants

Cs	Small-flowered Morning Glory *(Convolvulus simulans)*
Dv	Variegated Dudleya *(Dudleya variegata)*
Ea	San Diego Button Celery *(Eryngium aristulatum* var. *parishii)*
Fb	Chocolate Lily *(Fritillaria biflora)*
Fv	San Diego Barrel Cactus *(Ferocacutus viridescens)*
Ih	San Diego Marsh Elder *(Iva hayesiana)*
Nf	Spreading Navarretia *(Navarretia fossalis)*
Sc	Ashy spike-moss *(Selaginella cinerascens)*

Sensitive Animals

BUOW	Burrowing Owl *(Athene cunicularia)*
BUOW-B	Burrowing Owl Burrow
GRSP	Grasshopper Sparrow *(Ammodramus savannerum)*
HOLA	California Horned Lark *(Eremophila alpestris actia)*
LOSH	Loggerhead Shrike *(Lanius ludovicianus)*
NOHA	Northern Harrier *(Circus cyaneus)*
QCBU	Quino Checkerspot Butterfly *(Euphydras editha quino)*
RIFS	Riverside Fairy Shrimp *(Streptocephalus woottoni)*
SDFS	San Diego Fairy Shrimp *(Branchinecta sandiegonensis)*
TSGS	Two-striped Garter Snake *(Thamnophis hammondii)*
WESP	Western Spadefoot Toad *(Spea hammondii)*
WTKI	White-tailed Kite *(Elanus leucurus)*

Other

- Project Site
- San Diego Fairy Shrimp Final Critical Habitat
- Watershed
- Extent of Sensitive Resource
- U.S./Mexico Border

* Road Pool does not have a Holland code.

Off-site Impacts

Project Site

Airway Road

Enrico Fermi Drive

Enrico Fermi Place

Siempre Viva Road

Via De La Amistad

SDFS RIFS WESP SDFS BUOW BUOW-B Cs Ih TSGS NOHA HOLA GRSP Fv Fv3 Fv2 Fv16 Dv147 Dv1177 Fb4 Fv 6 Sc Dv1342 WTKI Dv673 QCBU Dv127 Ea Nf 3 LOSH

N W E S

500 250 0 500 Feet

Job No: PGN-01 Date: 06/18/10

Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig3_VegSenRes.mxd -NM

Vegetation and Sensitive Species

OTAY BUSINESS PARK

Figure 3

HELIX

3.1.1 Vernal Pool

Vernal pools are highly specialized communities formed under specific physical conditions, including a subsurface hardpan or claypan that causes ponding by inhibiting the downward percolation of water, and a topography generally characterized by a series of low hummocks (mima mounds) and depressions (vernal pools). Under these conditions, water collects in the depressions during the rainy season, gradually evaporating following the rain. In addition to holding water, vernal pools support one or more of the plant species listed in the Corps vernal pool plant indicator species list (Corps 1997). Among other potentially occurring animal species within vernal pools, San Diego fairy shrimp and Riverside fairy shrimp are federally listed as endangered. Vernal pools are a Tier I habitat under the Biological Mitigation Ordinance (BMO) because they support a number of sensitive plant and animal species, are limited in distribution, and/or are declining in area.

Ten vernal pools occur within the project site, with a combined surface area of 0.21 acre; no vernal pools were mapped in the off-site road improvement areas (Figure 3). Each of the vernal pools had at least one indicator species; however, the indicator species cover did not approach 1 percent in any pool. The pools are highly disturbed and exhibit very low species cover and richness. Years of agriculture, off-road vehicle use, and Border Patrol activity have reduced cover by vernal pool indicator species, leaving most of the pools almost completely unvegetated throughout the year, including during the rainy season. Vernal pool indicator species that were observed in one or more pools include San Diego button-celery (*Eryngium aristulatum* var. *parishii*), spreading navarretia (*Navarretia fossalis*), toothed downingia (*Downingia cuspidata*), flowering quillwort (*Lilaea scillioides*), and water pygmyweed (*Crassula aquatica*). Five of the vernal pools occur on the hill in the south-central portion of the property, and most lie largely within a largely disturbed area. One pool (the largest on site) occurs near the bottom of the gentle south-facing slope in the eastern portion of the property and supports San Diego fairy shrimp. Four vernal pools occur in the south-central portion of the site, one of which supports Riverside fairy shrimp.

3.1.2 Freshwater Marsh

Freshwater marsh is generally dominated by perennial, emergent monocots up to 12 feet in height, often forming completely closed canopies. This habitat usually occurs on drainages and ponds lacking significant current and that are permanently flooded by fresh water. Prolonged saturation permits accumulation of deep peaty soils. As a wetland vegetation community, freshwater marsh is considered a Tier I habitat within the County. Although no freshwater marsh was mapped within the subject property, a small area (0.01 acre) was mapped off site along the proposed extension of Siempre Viva Road to the west (Figure 3).

3.1.3 Saltgrass Grassland

Saltgrass grassland is a community dominated by perennial native saltgrass (*Distichlis spicata*). The majority of the native grassland communities in California have been displaced by non-native grasslands dominated by introduced annual species; however, native grasslands, including saltgrass grassland, persist in areas as small isolated islands. The project site supports 0.19 acre of saltgrass grassland, occurring in two patches alongside the drainage in the northeastern portion

of the site; no saltgrass grassland was mapped in the off-site portion of the study area (Figure 3). Dominated by saltgrass, these patches are intermingled with upland non-native grasses such as oats (*Avena* spp.). Saltgrass grassland is identified as a Tier I habitat under the BMO.

3.1.4 Non-native Grassland

Non-native grassland consists of introduced grasses, often associated with native forbs. Introduction of exotic grasses in California due to grazing and agricultural practices, coupled with severe droughts, has contributed to the conversion of native grassland communities to non-native grassland (Jackson 1985). Whereas native grasslands supported mostly perennials such as needlegrass (*Nasella* sp.), non-native grasslands (including those on site) support mostly annuals. Regardless of species composition, grasslands throughout the County may support a substantial rodent population and therefore serve as valuable raptor foraging habitat. Non-native grassland is identified as a Tier III habitat under the BMO.

Non-native grassland is the dominant vegetation community on site, covering approximately 152.82 acres on the property (Figure 3). It is characterized by oats, foxtail chess (*Bromus madritensis* ssp. *rubens*), common ripgut grass (*Bromus diandrus*), filaree (*Erodium* spp.), and mustards (*Brassica nigra* and *Hirschfeldia incana*) as well as scattered purple needlegrass. Non-native grassland is also abundant in the off site portion of the study area.

3.1.5 Road Pools

Road pools are ephemeral water-holding basins formed on heavily compacted dirt in dirt trails and roads that lack vernal pool indicator plant species (Corps 1997). Such standing water has potential to support sensitive animal species such as San Diego and Riverside fairy shrimp and spadefoot toads. Within the context of this project, only basins that support San Diego or Riverside fairy shrimp are mapped as road pools; basins without fairy shrimp represent essentially puddles within other vegetation communities and are mapped as a part of the surrounding community. Ten road pools totaling 0.05 acre occur in the southern half of the project site, generally within disturbed areas. Four road pools, totaling 0.05 acre, were mapped off site, three of which occur within the off-site road improvement area (Figure 3).

3.1.6 Disturbed Habitat

Disturbed habitat consists of land that has been cleared of vegetation or where the soil has been compacted, greatly reducing its habitat value. Under the BMO, disturbed habitat is a Tier IV habitat and is not considered sensitive. To meet the County's definition of disturbed habitat, an area must exhibit the following characteristics:

- It has been permanently altered by legal human activity;
- Disturbance must have eliminated all future biological value for most species;
- No native vegetation remains; and
- It does not exhibit moderate to high value for sensitive wildlife, including raptors foraging potential.

Characterized largely by dirt roads used by Border Patrol agents, disturbed habitat covers approximately 8.06 acres within the subject property and 2.92 acres within the off-site impact area (Figure 3). In addition to areas of exposed, packed dirt, the disturbed habitat on site includes areas dominated by mustard and Russian thistle (*Salsola tragus*).

3.1.7 Developed

Developed land occurs where permanent human structures or pavement have been installed, or where landscaping is clearly tended and maintained, preventing the growth of native vegetation. Under the BMO, developed land is a Tier IV habitat and is not considered sensitive. Approximately 0.27 acre of developed land occurs as a portion of gravel road in the southeastern corner of the site as well as a small covered structure in the northwestern portion of the site, and approximately 1.14 acre occurs within the off-site impact area (Figure 3).

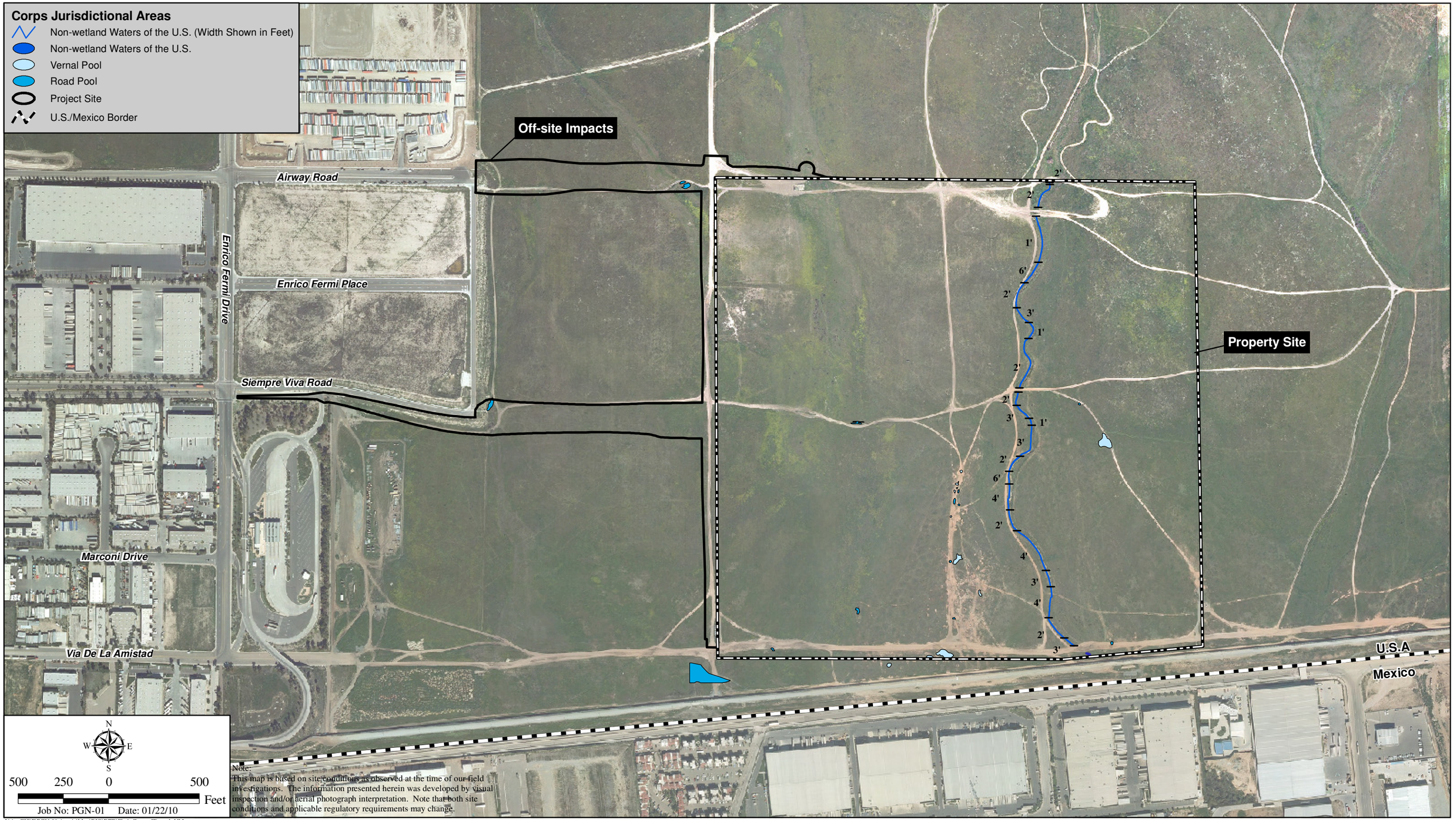
3.2 PLANT AND ANIMAL SPECIES

A total of 82 plant species were recorded on the project site, most of which were observed in non-native grassland (Appendix A). A total of 33 animal species was recorded on the project site, including 11 invertebrates, 2 amphibians, 2 reptiles, 15 birds, and 3 mammals (Appendix B).

3.3 JURISDICTIONAL AREAS

A total of 0.46 acre under Corps jurisdiction occurs on site. An additional 0.05 acre under Corps jurisdiction occurs off site in the road improvement areas. Approximately 0.20 acre of Corps jurisdictional non-wetland Waters of the U.S. represented by an ephemeral drainage and ephemeral pond occurs in the east-central portion of the property (Figure 4). Because one or more vernal or road pools on and off site are hydrologically connected to the drainage, the vernal pools (0.21 acre) and road pools on and off site occupied by fairy shrimp (0.05 acre on site and 0.05 acre off site) also are Corps jurisdictional. A small patch of non-jurisdictional freshwater marsh habitat was recorded in the western portion of the off-site improvement area. It occurs as a small depression at the base of an adjacent manufactured slope and receives runoff from the adjacent slope and graded pad through a brow ditch. Water conveyed to this area collects on the edge of and within the adjacent road and then sheet flows into non-native grassland to the south; it does not flow into or otherwise connect with a drainage. As this area is a non-historic, artificially created, isolated feature, it was not considered Corps or CDFG jurisdictional (HELIX 2008c).

CDFG jurisdictional areas total 0.20 acre within the project site, consisting of 0.19 acre of streambed and 0.01 acre of ephemeral pond (Figure 5). The ephemeral pond occurs in a shallow depression at the southern end of the drainage where a road constructed along the border fence forms a dam, causing water to pool before draining east along the road and then off site through a culvert into Mexico. This pond is sparsely vegetated with curly dock, mustard, and western sunflower (*Helianthus annuus*) and was not mapped as a vegetation community separate from the disturbed habitat in which it occurs.



Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig4_Corps_JD.mxd -NM

Corps Jurisdictional Delineation

OTAY BUSINESS PARK

Figure 4

HELIX

I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig5_CDFG_JD.mxd -NJ

CDFG Jurisdictional Delineation

OTAY BUSINESS PARK

Figure 5

HELIX

The County RPO wetland definition includes only features with a predominance of hydrophytic vegetation, undrained hydric soil, or drainages with non-soil substrates (County 2007). Soil-lined drainages and wet areas that do not support a predominance of hydrophytes or undrained hydric soil are not RPO wetlands. The vernal pools on site are predominantly unvegetated, only hold water for brief periods each year, and have a soil bottom. With the concurrence of County staff, based on these requirements, the vernal pools within the project site do not meet the County RPO wetland criteria (OBP 2007). The on-site drainage and off-site freshwater marsh also do not meet County RPO wetland criteria for the following reasons: (1) the on-site drainage is an ephemeral, soil-lined channel that does not support "a predominance of hydrophytes" or have a substratum that is "predominately undrained hydric soil", and (2) the small (0.01 acre) freshwater marsh area occurs as a small depression at the at the base of an adjacent manufactured slope and was created by runoff from the adjacent slope and graded pad through a brow ditch; it is a non-historic, artificially created, isolated feature. This area meets the criteria listed under RPO Section 86.602(q)(2) for areas that are not considered RPO wetlands because it (a) has wetland attributes solely due to man-made structures, (b) has negligible biological function or value as wetlands, (c) is small and geographically isolated from other wetland systems, (d) is not a vernal pool, and (e) it does not have substantial or locally important populations of wetland-dependent species.

Table 3
JURISDICTIONAL AREAS ON SITE*

JURISDICTIONAL AREA	CORPS†	CDFG	COUNTY RPO
Wetlands			
Vernal pools	0.21	0.00	0.00
Road pools	0.05	0.00	0.00
Non Wetlands			
Waters of the U.S./ Streambed	0.19	0.19	0.00
Ephemeral pond	0.01	0.01	0.00
TOTAL	**0.46**	**0.20**	**0.00**

*Areas are presented in acre(s) rounded to the nearest 0.01
†Additionally, 4 road pools totaling 0.05 acre also were mapped off site

3.4 SENSITIVE RESOURCES

Sensitive vegetation communities include those that are unique, of relatively limited distribution, or of particular value to wildlife. Sensitive species include those that have been given special recognition by federal, state, or local government agencies or organizations due to limited, declining, or threatened populations.

3.4.1 Sensitive Vegetation Communities

Sensitive communities include those that have been depleted, are naturally uncommon, or support sensitive species. Within the project site vernal pools, saltgrass grassland, and non-native grassland are considered sensitive vegetation communities by the County. Additionally, the freshwater marsh mapped off site is a sensitive vegetation community.

3.4.2 Jurisdictional Areas

Project impacts to wetland habitat or Waters of the U.S. must be reviewed in the context of a Corps 404 Permit and/or a California Fish and Game Code Section 1602 Streambed Alteration Agreement application and the County RPO (County 2007). As a result, all Corps and CDFG jurisdictional areas and County RPO wetlands are considered sensitive and would require mitigation if impacted.

3.4.3 Sensitive Plant Species

Eight sensitive plant species were detected on the project site (Figure 3): small-flowered morning-glory (*Convolvulus simulans*), variegated dudleya (*Dudleya variegata*), San Diego button-celery, San Diego barrel cactus (*Ferocactus viridescens*), chocolate lily (*Fritillaria biflora*), spreading navarretia (*Navarretia fossalis*), San Diego marsh-elder (*Iva hayesiana*), and ashy spike-moss (*Selaginella cinerascens*). Additionally, sensitive plant species known from the project vicinity are assessed for potential to occur on site and are included in Appendix C. None have high potential to occur on-site.

Small-flowered morning-glory (*Convolvulus simulans*)
Status: --/--; CNPS List 4.2; County Group D
Distribution: Occurs through much of coastal California from Contra Costa County south into Baja California, Mexico (Baja)
Habitat: Grows in friable clay soils in open areas typically mapped as coastal sage scrub, chaparral, or grasslands
Status on site: Five individuals were observed in the northern portion of the site, four of which occur just south of a dirt road along the northern boundary

Variegated dudleya (*Dudleya variegata*)
Status: --/--; CNPS List 1B.2; County Group A; MSCP Covered
Distribution: San Diego County and Baja
Habitat: Grows on rocky clay soils in grasslands, sage scrub, and chaparral
Status on site: Approximately 3,465 individuals were recorded by URS on the hill in the south-central portion of the site. These individuals likely represent a species subpopulation found in a number of Otay Mesa locations.

San Diego button-celery (*Eryngium aristulatum* ssp. *parishii*)
Status: FE/SE; CNPS List 1B.1; County Group A; MSCP Covered
Distribution: Riverside and San Diego counties south into Baja
Habitat: Occurs on the periphery of vernal pools and in areas with mima mound topography
Status on site: Three individuals were recorded within the large vernal pool along a dirt road in the eastern portion of the site

San Diego barrel cactus (*Ferocactus viridescens*)
Status: --/--; CNPS List 2.1; County Group B; MSCP Covered
Distribution: San Diego County; Baja
Habitat: Generally found on Diegan coastal sage scrub hillsides, often at the crest of slopes among cobbles; occasionally found on the periphery of vernal pools and mima mounds
Status on site: Thirty-one individuals occur on the hill in the south-central portion of the site

Chocolate lily (*Fritillaria biflora*)
Status: --/--; not CNPS listed; County Group D
Distribution: Found through much of central and southern California and Baja
Habitat: Typically found in native or non-native grasslands, as well as openings within sage scrub and chaparral, or native perennial grasslands, often in areas with clay soils
Status on site: Four individuals identified by County staff approximately 12 feet west of the central dirt road.

San Diego marsh-elder (*Iva hayesiana*)
Status: --/--; CNPS List 2.2; County Group B
Distribution: San Diego County; Baja
Habitat: Creeks of intermittent streambeds with open riparian canopy, allowing substantial sunlight to penetrate; often found on sandy alluvial embankments with cobbles
Status on site: Eleven individuals occur along the north-south drainage in the northeastern quadrant of the site

Spreading navarretia (*Navarretia fossalis*)
Listing: FT/--; CNPS List 1B.1; County Group A, MSCP Covered
Distribution: Western Riverside and southwestern San Diego counties as well as northwestern Baja California, Mexico
Habitat: Vernal pools, vernal swales, or roadside depressions. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools.
Status on site: Three individuals were recorded within a vernal pool along a dirt road in the eastern portion of the site.

Ashy spike-moss (***Selaginella cinerascens***)
Listing: --/--; CNPS List 4.1; County Group D
Distribution: Orange and San Diego counties; northwestern Baja California, Mexico
Habitat: Flat mesas in coastal sage scrub and chaparral. A good indicator of site degradation, as it rarely inhabits disturbed soils.
Status on site: This species was recorded in one location in the south-central portion of the site.

3.4.4 Sensitive Animal Species

Eleven sensitive animal species have been observed on site during surveys from 2000 to 2008 (Figure 3): San Diego fairy shrimp, Quino checkerspot butterfly, Riverside fairy shrimp, western spadefoot toad (*Spea hammondii*), grasshopper sparrow (*Ammodramus savannarum*), burrowing owl, northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), California horned lark (*Eremophila alpestris actia*), and loggerhead shrike (*Lanius ludovicianus*). Additionally, the project site is within the reported territory of a golden eagle (*Aquila chrysaetos*) pair, but this species was not detected on site during surveys for the Otay Business Park; however a golden

eagle was observed flying over the site during a survey for SR 11 (URS 2005). A single two-striped garter snake (*Thamnophis hammondii*) was observed just off site to the north. No Quino checkerspot butterflies were detected on site during 2001 or 2006 protocol surveys conducted by EDAW; however, one individual was detected on the central hill in the southern portion of the property by URS (2005). Sensitive animal species that were not detected but have potential to occur on site and are listed in Appendix D. Explanations of status and sensitivity codes for both plant and animal species are included in Appendix E.

San Diego fairy shrimp (*Branchinecta sandiegonensis*)
Status: FE/--; County Group 1; MSCP Covered
Distribution: San Diego County
Habitat: Seasonal pools that occur in tectonic swales or earth slump basins and other areas of shallow and standing water, often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral
Status on site: Observed in one vernal pool (0.08 acre) and nine road pools on site (0.05 acre) and in three road pools off site (totaling 0.10 acre; Figure 3); 114.4 acres of the site is mapped as Critical Habitat for the San Diego fairy shrimp

Quino checkerspot butterfly (*Euphydryas editha quino*)
Status: FE/--; County Group 1
Distribution: Historically occurred through Los Angeles, Riverside, Orange, and San Diego counties as well as northern Baja, but currently exists in several (probably isolated) colonies in southwestern Riverside and southern San Diego counties and northern Baja. San Diego populations are mainly limited to Otay Mountain, Brown Field, sections of Otay Mesa, Jamul, Marron Valley, and Jacumba
Habitat: Primary larval host plants in San Diego are dwarf plantain (*Plantago erecta*) at lower elevations and woolly plantain (*P. patagonica*) and white snapdragon (*Antirrhinum coulterianum*) at higher elevations. Purple owl's clover (*Castilleja exserta*) is considered a secondary host plant if primary host plants have senesced. Potential habitat includes areas of low-growing and sparse vegetation typically with open stands of sage scrub and chaparral, adjacent open meadows, old foot trails and dirt roads
Status on site: Dwarf plantain and potential nectar sources are abundant on the upper slopes of the hill in the south-central portion of the site, where one individual was detected within non-native grassland by URS on March 7, 2005. None observed on site during 2006 protocol surveys in association with SR-11; a localized fire occurred in summer 2005 just east of the observed Quino checkerspot butterfly location. The entire 161.6-acre property supports habitat at least marginally suitable to support the Quino checkerspot butterfly; however the habitat on the mesa in the southern portion of the site contains much higher quality potential habitat than the remainder of the site.

Riverside fairy shrimp (*Streptocephalus woottoni*)
Status: FE/--; County Group 1; MSCP Covered
Distribution: Currently known from vernal pools and other ephemeral basins in Riverside, Orange, and San Diego counties; northern Baja
Habitat: Typically deeper vernal pools and seasonal wetlands; as this species develops slower than other fairy shrimp species, typical pools are 30 cm or deeper (Simovich 1990)
Status on site: Observed in one vernal pool (0.06 acre) and two road pools (0.01 acre) on site and in two road pools off site (Figure 3). The pools supporting Riverside fairy shrimp were shallower than the typically required 30 cm.

Western spadefoot toad (*Spea hammondii*)
Status: --/SSC; County Group 2
Distribution: Throughout the Central Valley and San Francisco Bay area south along the coast to northwestern Baja
Habitat: Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; require temporary pools for breeding and friable soils for burrowing. Generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).
Status on site: Larvae and/or neonates were observed in two vernal pools (0.14 acre) and one road pool (0.01 acre) on site, as well as one road pool off site; potentially suitable upland, non-breeding habitat occurs throughout the grasslands on site

Two-striped garter snake (*Thamnophis hammondii*)
Status: --/SSC; County Group 1
Distribution: Monterey County south through the coastal ranges into northwestern Baja California
Habitat: Occurs along permanent and intermittent streams bordered by dense riparian vegetation, but occasionally associated with vernal pools or stock ponds
Status on site: A single individual was observed within a drainage just off-site to the north; although this species was not found on site, potentially suitable habitat occurs within approximately 0.20 acre of drainages and ephemeral ponds within the property

Grasshopper sparrow (*Ammodramus savannarum*)
Status: --/SSC; County Group 1
Distribution: Summer resident in coastal California and much of the U.S. east of the Rocky Mountains; winters in Mexico and South America
Habitat: Occurs in dense grasslands with low shrub cover
Status on site: One individual was recorded by URS in center of the site along northern slope of hill within non-native grassland; the entire 161.6-acre site supports suitable habitat for this species

Golden eagle (*Aquila chrysaetos*)
Status: BCC; BGEPA/WL, fully protected; County Group 1; MSCP Covered
Distribution: Breeds from Alaska across northern Canada south to Mexico, Canadian prairie provinces, and Labrador. Winters in southern part of breeding range and in much of U.S., except the southeast
Habitat: Forages over grassy and open, shrubby habitats. Generally nests on remote cliffs; requires areas of solitude at a distance from human habitation
Status on site: None observed during project-related surveys of the site, which does not support nesting habitat, but one individual was observed flying over the site during a survey for SR-11 (URS 2005). The entire 161.6-acre site supports appropriate non-native grassland foraging habitat. Also, the entire project site lies within the territory of a pair reported to nest in O'Neal Canyon approximately 1.5 miles to the northeast. Because other golden eagle pairs are known to nest to the north and east of the O'Neal Canyon pair, the primary foraging area of the O'Neal Canyon pair is largely restricted to Otay Mesa.

Burrowing owl (*Athene cunicularia*)
Status: BCC/SSC; County Group 1; MSCP Covered
Distribution: Lower British Columbia to Manitoba, Canada; central and western U.S. south to northern Mexico and Baja
Habitat: Open areas such as grasslands, pastures, coastal dunes, desert scrub, and agriculture fields.
Status on site: Six occupied burrows and two individuals have been observed on the project site, and three burrows and one separate individual were also detected within 100 feet of the property (Figure 3). Based on these findings, it is assumed that nine burrowing owl pairs occur in the survey area and that the entire project site is occupied. Approximately 165.72 acres of habitat, consisting of all of the grassland on site and in the off-site portion of the study area, is considered occupied by burrowing owls.

Northern harrier (*Circus cyaneus*)
Status: --/SSC; County Group 1, MSCP Covered
Distribution: Widespread throughout temperate regions of North America and Eurasia. Winters and migrates throughout California from below sea level in Death Valley to 9,800 feet. Known breeding areas in San Diego County include Torrey Pines State Park, Tijuana River Valley, and Camp Pendleton.
Habitat: Coastal, salt, and freshwater marshlands; grasslands; prairies
Status on site: A single individual was observed flying over the grassland in the central portion of the project site; additionally, one individual observation occurred off site to the southwest (Figure 3). The entire 161.6-acre project site supports potentially suitable habitat for this species.

White-tailed kite (*Elanus leucurus*)
Status: --/Fully Protected; County Group 1
Distribution: Primarily occurs throughout the coastal slopes of San Diego County
Habitat: Nests in riparian woodlands and oak or sycamore groves adjacent to grassland over which they forage
Status on site: A single individual was detected flying over the central portion of the site (Figure 3). Suitable foraging habitat occurs throughout the 161.6-acre site; however no suitable nesting habitat is present.

California horned lark (*Eremophila alpestris actia*)
Status: --/WL; County Group 2
Distribution: Coastal slopes and lowlands from Sonoma County to northern Baja
Habitat: Sandy beaches, agricultural fields, grassland, and open areas
Status on site: A single individual was detected just below the eastern slopes of the hill in the south-central portion of the site (Figure 3). Suitable habitat occurs throughout the 161.6-acre project site and is abundant in the project vicinity.

Loggerhead shrike (*Lanius ludovicianus*)
Status: BCC/SSC; County Group 1
Distribution: Widespread but declining throughout North America; winters in Central America
Habitat: Open habitats including grasslands, shrublands, and ruderal areas with adequate perching locations
Status on site: A single individual was detected within disturbed habitat in the southeastern portion of the site. Additionally, two observations were made off site to the south and southwest (Figure 3). Suitable habitat occurs throughout the 161.6-acre project site and is abundant off site in the project vicinity.

4.0 REGIONAL CONTEXT AND EVALUATION

4.1 REGIONAL CONTEXT

The project site is within the South County Segment of the County's MSCP Subarea Plan and contains areas designated as MSCP Minor Amendment Areas and Minor Amendment Areas Subject to Special Considerations. The site does not function as a wildlife corridor for the region.

4.2 FEDERAL GOVERNMENT

Administered by the USFWS, the Federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a 'take' under the Federal ESA. Section 9(a) of the Federal ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 'Harm' and 'harass' are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

Sections 4(d), 7, and 10(a) of the Federal ESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion, issued by the USFWS for non-marine related listed species issues. A Section 7 consultation is required when there is a nexus between federally listed species' use of the site and impacts to Corps jurisdictional areas. Section 10(a) allows issuance of permits for 'incidental' take of endangered or threatened species. The term 'incidental' applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity.

All migratory bird species that are native to the U.S. or its territories are protected under the Migratory Bird Treaty Act (MBTA), as amended under the MBTA of 2004 (FR Doc. 05-5127). This law is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, USFWS places restrictions on disturbances allowed near active nests of raptors, such as red-tailed hawks and burrowing owls.

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the Clean Water Act. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of all Waters of the U.S. Permitting for projects filling Waters of the U.S., including wetlands is overseen by the Corps under Section 404 of the Clean Water Act. Projects may be permitted on an individual basis or may be covered under one of several approved nationwide permits. Individual permits are assessed individually based on the type of action, amount of fill, etc.

4.3 STATE OF CALIFORNIA

The California ESA is similar to the Federal ESA in that it contains a process for listing of species and regulating potential impacts to listed species. Section 2081 of the California ESA authorizes CDFG to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes.

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. The NPPA regulates collection, transport, and commerce in plants that are listed. The California ESA followed NPPA and covers both plants and animals that are determined to be endangered or threatened with extinction. Plants listed as rare under NPPA were designated threatened under the California ESA.

The California Fish and Game Code (Section 1600 et seq.) requires an agreement with CDFG for projects affecting riparian and wetland habitats through issuance of a Streambed Alteration Agreement. It is anticipated that the project will require a 1602 Agreement from the CDFG for impacts to streambeds.

4.4 COUNTY OF SAN DIEGO

4.4.1 MSCP Amendment Areas

The MSCP has been prepared to meet the requirements of the California Natural Community Conservation Planning (NCCP) Act of 1991, Federal ESA, and California ESA. The NCCP is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple species by identifying key areas for preservation as open space in order to link core biological areas into a regional wildlife preserve. The County's MSCP Subarea Plan (County 1997) implements the MSCP within the unincorporated areas under the jurisdiction of the County.

The project site lies within the South County Segment of the County's MSCP Subarea Plan. The majority of the site is designated as a Minor Amendment Area, but the southern portion is designated as a Minor Amendment Area Subject to Special Considerations. Because these Amendment Areas are not currently covered under the MSCP, the County's Take Authorizations do not apply to them until the amendment process has been completed. The County is undergoing the amendment process for the Quino checkerspot butterfly for the entire County MSCP Subarea, including the Major and Minor Amendment Areas within the project area.
The Amendment process also requires that the protection of MSCP covered species be addressed. If a project satisfies the preservation requirements of the Federal and California ESAs and NCCP, then the MSCP can be amended to include the project site, and take authorization for covered species can be issued.

Major Amendment Areas

Lands designated as Major Amendment areas under the County's MSCP Subarea Plan include core habitat areas essential to many MSCP covered species. Take authorization for this amendment area would not be authorized until the amendment process has been completed.

Major Amendments must conform to the County's MSCP Subarea Plan and the BMO, must be authorized by the USFWS and CDFG, and be in conformance with all applicable laws and regulations, including CEQA, the National Environmental Policy Act (NEPA), and federal and California ESAs. Currently, a Major Amendment is in process for the Quino checkerspot butterfly within the County Subarea. The project site does not include any areas designated as a Major Amendment Area.

Minor Amendment Areas

Minor Amendment areas support valuable biological resources that could be partially or completely eliminated (with appropriate mitigation) without significantly affecting the overall goals of the County's MSCP Subarea Plan (County 1997). In addition to the County, the minor amendment process requires approval of the USFWS Field Office Supervisor and the CDFG NCCP Program Manager. Full reviews under NEPA are typically not required. The bulk of the eastern, western, and northern portions of the site are considered Minor Amendment Areas.

Minor Amendment Areas Subject to Special Considerations

Minor Amendment Areas Subject to Special Consideration are limited to the East Otay Mesa Specific Plan Area, and their designation corresponds to the EOMSPA's "G" designator. These areas are typically transitional areas located between Major and Minor Amendment Areas, but on site, these lands were designated because of their potential to support vernal pools. Areas with the "G" designator are subject to the Sensitive Resource Area Regulations of the Zoning Ordinance. Prior to project approval, the applicant must prepare a Resource Conservation Plan addressing impacts to habitat and endangered species on site. The central and southern portions of the property are considered Minor Amendment Areas Subject to Special Considerations.

4.4.2 MSCP Covered Species

Most federally listed endangered species found locally are covered under the MSCP. Species observed during surveys of the property that are covered by the MSCP include three plant species (variegated dudleya, San Diego button-celery, San Diego barrel cactus) and five animal species (San Diego fairy shrimp, Riverside fairy shrimp, golden eagle, burrowing owl, northern harrier).

4.4.3 Listed Species Not Covered by the MSCP

Quino checkerspot butterfly is not currently covered because of "unknown conservation and lack of assurances that the Plan will protect preferred habitat (mesa tops/grassland) and connection to known source populations" (County 1997). As discussed in Section 4.4.1, the County is currently in the process of amending the MSCP to include the Quino checkerspot butterfly as a covered species. If the MSCP is amended to cover the Quino checkerspot butterfly when the proposed project is processed, then no additional USFWS authorization would be required for take of this species. In the absence of an amendment to the MSCP, however, each individual landowner in areas where Quino checkerspot butterflies are present would be required to process an individual Section 10(a)(1)(B) Permit or Section 7 consultation under the Federal ESA in order to proceed with development. Since the amendment to the MSCP has not been finalized at this time, the project applicant has requested a Section 7 Consultation for impacts to QCB.

4.4.4 Biological Mitigation Ordinance

The BMO is the mechanism by which the County implements the MSCP at the project level within the unincorporated area to attain the goals set forth in the County's MSCP Subarea Plan area. The BMO contains design criteria and mitigation standards which, when applied to projects requiring discretionary permits, protect habitats and species and ensures that a project does not preclude the viability of the MSCP Preserve System. In this way, the BMO promotes the preservation of lands that contribute to contiguous habitat core areas or linkages.

Under the BMO, habitat is considered a Biological Resource Core Area (BRCA) if it meets one of the following criteria:

- The land is shown as pre-approved mitigation area on the wildlife agencies' pre-approved mitigation map;
- The land is located within an area of habitat which contains biological resources that support or contribute to the long-term survival of Sensitive Species . . . and is adjacent to preserved habitat that is within the pre-approved mitigation area on the wildlife agencies' pre-approved mitigation map;
- The land is part of a regional linkage/corridor;
- The land is shown on the Habitat Evaluation Map as Very High or High and links significant blocks of habitat, except that land which is isolated or links small, isolated patches of habitat and land that has been affected by existing development to create adverse edge effects shall not qualify as a BRCA;
- The land consists of or is within a block of habitat greater than 500 acres in area of diverse and undisturbed habitat that contributes to the conservation of Sensitive Species; or
- The land contains a high number of Sensitive Species and is adjacent or contiguous to surrounding undisturbed habitats.

The site is not a part of any identified pre-approved mitigation area, or regional linkage or corridor, but is shown as supporting small areas of land identified as Very High or High on the County's Habitat Evaluation Map. However, these areas comprise only a small portion of the site (4.7 acres shown as High and 2.3 acres shown as Very High) and do not link significant blocks of habitat. Moreover, the project site supports largely non-native grassland and other disturbed vegetation communities, and is adjacent to similarly disturbed properties. Based on these factors alone, the proposed project would not be considered a BRCA. Although dominated by non-native grassland, and characterized by a preponderance of non-native or invasive species, the project site supports a large number of sensitive species, including several that are considered threatened or endangered by the USFWS or CDFG as well as vernal pools and road pools containing fairy shrimp. As a result, the County considers the project site to be a BRCA.

Additionally, the BMO requires a minimum of 80 percent avoidance of on-site populations of County List A and B plant species. In order to provide greater overall conservation for the Quino checkerspot butterfly and other MSCP covered species; however, the MSCP amendment is proposed to maximize protection of Quino checkerspot butterfly in the most defensible preserve configuration, and impacts to other sensitive species would be allowed to be mitigated as noted below.

4.4.5 Resource Protection Ordinance

The County regulates impacts to biological resources via its RPO (County 2007); in addition to wetlands, it addresses sensitive habitat lands and wetland buffers. Sensitive Habitat Lands are defined in the RPO as:

> lands that support unique vegetation communities or the habitats of rare or endangered species or sub-species of animals or plants as defined by Section 15380 of the State California Environmental Quality Act. "Sensitive Habitat Lands" includes the area necessary to support a viable population of any of the above species in perpetuity or which is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor.

Wetland buffers are defined as:

> lands that provide a buffer area of an appropriate size to protect the environmental and functional habitat values of the wetland, or which are integrally important in supporting the full range of the wetland and adjacent upland community.

5.0 IMPACTS

Impacts caused by a development project may be considered either direct or indirect. Direct impacts occur when project grading, construction, or brush management eliminate existing vegetation communities or species. The currently proposed project would cause direct impacts to the entire project site.

Indirect impacts occur when secondary effects of a project, including construction noise, dust, night lighting, toxic runoff, reduced water quality, non-native plant or animal invasion, roadkill, or human activity result in loss of vegetation communities or species. Typically, indirect impacts are separated temporally or spatially from the original impact, may be less acute, or spread over a large area.

5.1 SIGNIFICANCE DETERMINATION CRITERIA

A project will have a significant adverse environmental effect related to biology it meets any of the Criteria described in the County's Guidelines for Determining Significance (County 2007):

1. The project would have a substantial adverse effect, either directly or through habitat modifications, on a candidate, sensitive, or special status species listed in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
2. The project would have a substantial adverse effect on riparian habitat or another sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS;
3. The project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means;

4. The project would interfere substantially with the movement of a native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. The project would conflict with one or more local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and/or would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan;
6. The project has potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal species; or
7. The project has impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other projects, and the effects of probable future projects).

5.2 DIRECT IMPACTS

The project applicant proposes to develop the majority of the habitat on site (including the off-site access roads).

5.2.1 Sensitive Plant Species

All of the sensitive plants recorded on the project site would be impacted by the proposed development, including small-flowered morning-glory (5 individuals), variegated dudleya (approximately 3,465 individuals), San Diego button-celery (3 individuals), San Diego barrel cactus (31 individuals), chocolate lily (4 individuals), San Diego marsh-elder (11 individuals), spreading navarretia (3 individuals), and one location supporting ashy spike-moss.

Because all variegated dudleya, San Diego button-celery, San Diego barrel cactus, spreading navarretia, and San Diego marsh-elder would be impacted, the proposed project would fail to meet the required avoidance of these species. Unless mitigated, these impacts would be considered significant because Criteria 1 and 6 would be met.

The project would impact all chocolate lily individuals observed on site. Even though there is no avoidance criterion for County Group D species, chocolate lily has been and is being impacted by projects throughout the Otay Mesa region, and thus project impacts to this species are considered significant as Criterion 6 would be met.

The project would impact all five of the small-flowered morning glory individuals observed on site. Avoidance of small-flowered morning glory (County Group D/CNPS List 4.2) is not considered feasible due to its location and distribution in the central and northern portions of the site. Because the site does not support a critical population of this species and the small number of individuals impacted would not threaten the long-term survival of the species in the region, combined with its low sensitivity rating, this impact is not considered significant.

The project would impact all ashy spike-moss (County Group D/CNPS List 4.1) observed on site. Because the site does not support a critical population of this species and the impacts would not threaten the long-term survival of the species in the region, combined with its low sensitivity rating, this impact is not considered significant.

5.2.2 Sensitive Animal Species

The proposed project would impact all of the sensitive animal species recorded on the project site.

Endangered fairy shrimp occurring in 0.14 acre of vernal pools and 0.05 acre of road pools would be impacted following project implementation, including San Diego fairy shrimp occurring in one vernal pool and nine road pools, and Riverside fairy shrimp occurring in one vernal pool and two road pools on site. In addition, off-site impacts would occur to three road pools totaling 0.05 acre, one of which supports Riverside fairy shrimp and each of which supports San Diego fairy shrimp. Approximately 114.4 acres of habitat that is considered Critical Habitat for the San Diego fairy shrimp also would be impacted. Unless mitigated, impacts to the San Diego fairy shrimp and Riverside fairy shrimp would be considered significant because Criteria 1 and 6 would be met.

The Quino checkerspot butterfly location on the hill in the southern portion of the site would be impacted by the proposed project. Unless mitigated, impacts to the Quino checkerspot butterfly would be considered significant because Criteria 1 and 6 would be met.

Approximately 0.15 acre of pools occupied by four observed western spadefoot toads would be impacted. The western spadefoot toad has been reported in a relatively large number of locations on Otay Mesa, many of which provide higher quality habitat (open sage scrub as opposed to grassland) than that provided on the project site. Implementation of the proposed project and impacts to four western spadefoot toads is not expected to have an adverse effect on the regional long-term survival of the species; therefore, Criterion 1 would not be met and impacts to the western spadefoot toad would be less than significant.

Although not observed on site, a single individual of two-striped garter snake was observed within a drainage just off-site to the north. Although potentially suitable habitat occurs within the on-site drainage, it is considered of marginal suitability due to ephemeral flows and lack of riparian vegetation. As such, the drainage is not expected to support a population of two-striped garter snake and project construction would not have a substantial adverse effect on this species, therefore not meeting Criteria 1 or 6.

Habitat supporting one or small numbers of observed grasshopper sparrow, northern harrier, white-tailed kite, California horned lark, and loggerhead shrike would be directly impacted by the proposed project; these impacts would be considered significant for Group 1 species since greater than 5 percent of the on-site population would be impacted through loss of habitat. However, these impacts would be reduced to a level below significance through the implementation of the proposed on-mesa mitigation at the Lonestar Parcels, which would preserve valuable foraging habitat for these species and be part of a larger area of preserved

lands. The off-mesa mitigation (location to be determined) also would support grassland habitat suitable for these species.

Of the nine burrowing owl burrows mapped within 100 feet of the project site and off site road impact areas, the project applicant proposes to impact seven burrows. Because all of the grassland (native and non-native) on site and in the off-site portion of the study area is considered occupied, approximately 163.60 acres of occupied habitat would be impacted. These impacts to burrowing owls would be considered significant because Criterion 1 would be met.

A golden eagle pair is known to nest in O'Neal Canyon several miles off site to the northeast. The project site lies within the pair's foraging area and one eagle was observed flying over the site (URS 2005). Because this species generally nests in rugged areas far from human activity, it is not expected to nest within several miles of the project site, and the project would only impact golden eagle foraging habitat. Because the project would impact greater than five acres of foraging habitat, Criterion 1 would be met and impacts to golden eagles would be considered significant.

5.2.3 Vegetation Communities

The project applicant proposes to impact 158.29 acres on site as well as 17.01 acres off site (Table 4). In total, 175.31 acres would be impacted: 0.14 acre of vernal pools, 0.01 acre of freshwater marsh, 0.19 acre of saltgrass grassland, 163.41 acres of non-native grassland, 0.10 acre of road pools, 10.19 acres of disturbed habitat, and 1.27 acres of developed land (Figure 6; Table 4). Impacts to vernal pools, freshwater marsh, saltgrass grassland, and non-native grassland would be considered significant because Criteria 2 and 6 above would be met.

Table 4
IMPACTS TO VEGETATION COMMUNITIES*

VEGETATION COMMUNITY	EXISTING ON SITE	IMPACTS		
		On Site	Off Site	Total
Vernal pool	0.21	0.14	0.00	**0.14**
Freshwater marsh	0.00	0.00	0.01	**0.01**
Saltgrass grassland	0.19	0.19	0.00	**0.19**
Non-native grassland	152.82	150.51	12.90	**163.41**
Road pool	0.05	0.05	0.05	**0.10**
Disturbed habitat	8.06	7.27	2.92	**10.19**
Developed	0.27	0.13	1.14	**1.27**
TOTAL	**161.60**	**158.29**	**17.01**	**175.31**

*All areas are presented in acre(s) rounded to the nearest 0.01

5.2.4 Jurisdictional Areas

Proposed on- and off-site grading would cause direct impacts to jurisdictional areas within the study area boundaries. Impacts to Corps jurisdictional areas include 0.19 acre of non-wetland Waters of the U.S., 0.14 acre of vernal pools, and 0.10 acre of road pools occupied by endangered fairy shrimp (including 0.05 acre off site; Figure 7). Impacts to CDFG jurisdictional

LEGEND

Vegetation Communities

- Vernal Pool (44000)
- Saltgrass Grassland (42130)
- Non-native Grassland (42200)
- Disturbed Habitat (11300)
- Developed (12000)
- Freshwater Marsh -Disturbed (52400)
- Road Pool*

Sensitive Plants

Cs	Small-flowered Morning Glory *(Convolvulus simulans)*
Dv	Variegated Dudleya *(Dudleya variegata)*
Ea	San Diego Button Celery *(Eryngium aristulatum* var. *parishii)*
Fv	San Diego Barrel Cactus *(Ferocacutus viridescens)*
Fb	Chocolate Lily *(Fritillaria biflora)*
Ih	San Diego Marsh Elder *(Iva hayesiana)*
Nf	Spreading Navarretia *(Navarretia fossalis)*
Sc	Ashy spike-moss *(Selaginella cinerascens)*

Sensitive Animals

BUOW	Burrowing Owl *(Athene cunicularia)*
BUOW-B	Burrowing Owl Burrow
GRSP	Grasshopper Sparrow *(Ammodramus savannerum)*
HOLA	California Horned Lark *(Eremophila alpestris actia)*
LOSH	Loggerhead Shrike *(Lanius ludovicianus)*
NOHA	Northern Harrier *(Circus cyaneus)*
QCBU	Quino Checkerspot Butterfly *(Euphydras editha quino)*
RIFS	Riverside Fairy Shrimp *(Streptocephalus woottoni)*
SDFS	San Diego Fairy Shrimp *(Branchinecta sandiegonensis)*
TSGS	Two-striped Garter Snake *(Thamnophis hammondii)*
WESP	Western Spadefoot Toad *(Spea hammondii)*
WTKI	White-tailed Kite *(Elanus leucurus)*

Other

- Project Impacts
- Watershed
- Extent of Sensitive Resource
- U.S./Mexico Border

* Road Pool does not have a Holland code.

Off-site Impacts

Project Site

Airway Road

Enrico Fermi Drive

Enrico Fermi Place

Siempre Viva Road

Via De La Amistad

N

W E

S

500 250 0 500

Feet

Job No: PGN-01 Date: 06/18/10

Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig6_VegSensResImpacts.mxd -NM

Vegetation and Sensitive Species/Impacts

OTAY BUSINESS PARK

Figure 6

HELIX

Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig7_CorpsImpacts.mxd -EV

Corps Jurisdictional Delineation/Impacts

OTAY BUSINESS PARK

Figure 7

HELIX

areas would total 0.20 acre (0.19 acre of streambed and 0.01 acre of ephemeral pond; Figure 8). No County RPO wetlands occur on site or in the off site road improvement areas; and the project would therefore not impact any County RPO wetlands. Unless mitigated, impacts to Corps and CDFG jurisdictional areas would be considered significant because Criteria 2 and 3 would be met. As the project would avoid impacts to County RPO wetlands Criterion 5 would not be met.

5.2.5 Wildlife Movement/Corridors

The project site is located in a portion of Otay Mesa characterized by non-native grassland that was historically in agriculture. Non-native grassland bounds the site to the immediate west, as well as to the north and east. The U.S./Mexico border is located just south of the site. Industrial and commercial development occurs further to the west. The project site and immediate vicinity are subject to frequent patrolling by the Border Patrol, as well as off-road vehicle use. There is no connection for wildlife movement into Mexico, as (1) the border fence greatly inhibits wildlife movement, and (2) the City of Tijuana is entirely developed in the areas south of the project site. The project site does not support any vegetated riparian corridors that might be used for wildlife movement, nor does it connect to any such corridors off site. Although the site itself supports habitat that could be used by a wide variety of species, including coyote, bobcat, skunks, raccoons, and jackrabbits, it is not considered a wildlife corridor since the site does not concentrate animal movement and direct it toward any particular resource.

In addition, the project site is not included within the Major Amendment Areas of the MSCP, which typically include core habitat areas essential to many MSCP covered species. Rather, the project site is located within a Minor Amendment Area and Minor Amendment Area Subject to Special Considerations. Minor Amendment Areas typically support valuable biological resources that could be partially or completely eliminated (with appropriate mitigation) without significantly affecting the overall goals of the County's Subarea Plan, while the site's designation as a Minor Amendment Area Subject to Special Considerations is due to the presence of vernal pools on-site, which are not important features with respect to wildlife movement. As such, the project site does not contain biological resources that are critical for sensitive species within the Plan Area, and therefore does not comprise a substantial wildlife movement corridor. As such, no impacts to wildlife movement/corridors would occur and Criterion 4 would therefore not be met. No significant impacts would occur.

5.2.6 Local Policies and Ordinances

MSCP

As stated in Section 4.4.1, the proposed project lies within the South County Segment of the County's MSCP Subarea Plan. It is designated as a Minor Amendment Area and Minor Amendment Area Subject to Special Considerations. The project would be conditioned to complete the Amendment process pursuant to the MSCP prior to the issuance of future implementing permits (e.g., grading permits, etc.). The project also would implement mitigation measures that would ensure that the goals of the South County Segment of the MSCP Subarea Plan are met by the project. With incorporation of the mitigation measures specified in Section 6.0, project implementation would not result in a significant impact due to a conflict with the County's MSCP and Criterion 5 would not be met.

Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig8_CDFGImpacts.mxd -EV

CDFG Jurisdictional Delineation/Impacts

OTAY BUSINESS PARK

Figure 8

HELIX

Biological Mitigation Ordinance

The project would impact all on-site individuals of seven sensitive plant species, including three on the County's Group A list (variegated dudleya, San Diego button-celery, and spreading navarretia), two on the Group B list (San Diego marsh-elder and San Diego barrel cactus), and two on the Group D list (small-flowered morning-glory and chocolate lily). Sensitive plant species on the project site occur in localized areas throughout the property, and it is not feasible to avoid impacts to 80 percent of the on-site populations of Group A and B species while still allowing for the implementation of an economically-viable mixed industrial project on the site. However, the proposed translocation of variegated dudleya, San Diego button-celery, spreading navarretia, and San Diego barrel cactus to the Lonestar Parcels, combined with translocation of San Diego marsh-elder to the realigned drainage channel, preservation of chocolate lily at the Lonestar Parcels, and planting of small-flowered morning-glory, would off-set impacts to these species from the project. In addition, the Lonestar Parcels support existing populations of variegated dudleya, San Diego button-celery, and San Diego barrel cactus, as well as other sensitive plant species. The proposed translocation efforts and preservation of the Lonestar Parcels would assist the County in assembling a large block of habitat that would contribute to the long-term conservation of these species.

For these reasons, the County, in consultation with the wildlife agencies, has decided to grant the project an exception to the BMO's requirements for on-site avoidance/conservation. With implementation of the mitigation measures set forth in Section 6.1, project implementation would not compromise the conservation of species and habitats pursuant to the Subarea Plan. Therefore, with the implementation of the required mitigation, and with the granting of an exception to the BMO's on-site conservation requirements pursuant to Section 86.509(b) of the BMO, project impacts to on-site sensitive plant species would not result in a conflict with the BMO and Criterion 5 would not be met.

The project would impact habitat for five narrow endemic animal species (San Diego fairy shrimp, Riverside fairy shrimp, Quino checkerspot butterfly, golden eagle, and burrowing owl), in addition to habitat for other sensitive animal species observed on site (western spadefoot, two-striped garter snake, grasshopper sparrow, northern harrier, white-tailed kite, California horned lark, and loggerhead shrike). These impacts would be considered significant but mitigable. In conformance with the BMO, the project would mitigate for impacts to narrow endemic species by a combination of habitat preservation, habitat restoration, and restrictions on clearing during the owl breeding season; and would mitigate for impacts to other sensitive animal species through habitat-based mitigation. Provided the proposed mitigation measures are implemented, Criterion 5 would not be met.

Resource Protection Ordinance

The project would impact sensitive habitat lands as outlined in the RPO, including lands that support rare or endangered species, which is considered significant. However, implementation of the proposed mitigation would provide an equal or greater benefit to the affected species, and the impacts would therefore not meet Criterion 5.

Criterion 5 also would not be met for the reasons listed below. The project would not:

- Impact coastal sage scrub;
- Preclude the preparation of an NCCP (project site is designated for Mixed Industrial development in the EOMSP);
- Preclude connectivity between areas of high habitat values;
- Impact existing wildlife corridors or habitat linkages;
- Reduce the likelihood of survival and recovery of listed species in the wild;
- Result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs; or
- Result in the take of eagles, eagle eggs or any part of an eagle.

5.3 INDIRECT IMPACTS

Potential indirect impacts from project construction include effects of construction activities, including fugitive dust, noise, animal behavioral changes, and errant construction impacts, as well as effects due to decreased water quality (through sedimentation, urban contaminants, or fuel release, for example), colonization of non-native plant species, nuisance animal species, and night-time lighting. Because the entire project site would be developed, all potentially indirect impacts would occur off site.

5.3.1 Fugitive Dust

Fugitive dust produced by construction could disperse onto native vegetation. A continual cover of dust may reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. This in turn could affect animals dependent on these plants for food or shelter. However, active construction areas and unpaved surfaces would be watered pursuant to County grading permit requirements to minimize dust generation. Therefore, Criterion 1 would not be met, and impacts from fugitive dust would be considered less than significant.

5.3.2 Construction Noise

Noise from such sources as grading, grubbing, and vehicular traffic would be an impact to local wildlife. Noise-related impacts would be considered significant if sensitive species (such as coastal California gnatcatchers or raptors) were displaced from their nests and failed to breed. Birds and other species may be temporarily displaced from the vicinity of the project area. No suitable habitat for gnatcatchers or tree-nesting raptors occurs within 300 feet of the project site, so these species are not anticipated to be impacted by construction noise. Suitable habitat for the northern harrier, a ground-nesting raptor, does occur on site, so this species has potential to be impacted. If grading or construction would occur within 800 feet of ground-nesting raptors, Criteria 1 and 4 would be met and effects due to construction noise would be significant.

5.3.3 Animal Behavioral Changes

Breeding birds and mammals may temporarily or permanently leave their nests and territories to avoid construction activity, which could reduce reproductive success and increase mortality.

Two owl burrows were observed just south of the proposed project. Owls inhabiting these burrows may be indirectly impacted from project construction. As a result, Criterion 1 and 4 would be met and the impacts would be considered significant unless mitigated.

5.3.4 Errant Construction Impacts

Errant grading or clearing beyond the proposed construction limits could impact sensitive vegetation communities or species intended for preservation. Prior to construction, orange construction fencing would be installed within the proposed limits of impact to clearly define the grading boundaries and prevent unintended impacts. As a result, Criterion 2 would not be met and errant construction impacts would be considered less than significant.

5.3.5 Water Quality

Water quality in riparian areas can be adversely affected by potential surface runoff and sedimentation during construction. The use of petroleum products (e.g., fuels, oils, and/or lubricants) and erosion of cleared land during construction could potentially contaminate surface water. Decreased water quality may adversely affect vegetation, aquatic animals, and terrestrial wildlife that depend upon these resources. To prevent otherwise significant water quality impacts, the project would comply with San Diego County Zoning, Storm Water, and Land Use regulations. Project design would implement erosion, sedimentation, and pollution control measures that would prevent a reduction in water quality in off-site streams and wetlands. As a result, Criterion 3 would not be met and indirect impacts to water quality would be considered less than significant.

5.3.6 Non-native Plant Species

Non-native plants could colonize sites disturbed by construction and could potentially spread into adjacent native habitats, especially following a disturbance such as fire. Many of these non-native plants are highly invasive and can displace native vegetation reducing native species diversity, potentially increase flammability and fire frequency, change ground and surface water levels, and potentially adversely affect native wildlife that is dependent on the native plant species, as a few examples. Because nearly the entire project site and most of the surrounding area is characterized by non-native grassland, spread of non-native plant species during construction is not anticipated to cause a significant impact. However, if project landscaping were to include any California Invasive Plant Council (Cal-IPC) species listed as highly invasive (Cal-IPC 2006), Criteria 1 and 2 would be met and impacts due to invasion by non-native plants would be considered significant unless mitigated.

5.3.7 Human Activity

Increases in human activity in the area could result in degradation of sensitive vegetation through habitat fragmentation, formation of additional edges through unauthorized road or trail creation, removal of existing vegetation, or illegal dumping. However, the project is an industrial development and would develop the entire site, so no increase in human activity in adjacent undeveloped areas is anticipated. Impacts due to human activity would be considered less than significant because Criteria 1 and 2 would not be met.

5.3.8 Nuisance Animal Species

Nuisance animal species, particularly domestic cats are known to impact native wildlife. However, because the project is an industrial development, Criteria 1 and 2 would not be met, and no significant impacts would occur due to nuisance animal species.

5.3.9 Night Lighting

Night lighting may expose wildlife species to an unnatural light regime and alter their behavior patterns, and may result in a loss of species diversity. Provided all construction and security lighting would be shielded or directed away from any adjacent open space, Criteria 1 and 4 would not be met and impacts due to night lighting would be considered less than significant.

5.4 CUMULATIVE IMPACTS

Although the impacts to sensitive biological resources on a project site may not be significant when considered alone, when multiple development projects occur in one area, the impacts may be cumulatively significant. It is anticipated that the vast majority of east Otay Mesa will be developed in the coming years, particularly in the area south of Otay Mesa Road, east of Enrico Fermi Drive and west of the mountains.

5.4.1 Sensitive Plant Species

Table 3-5 of the Final MSCP Plan states the following in regard to conservation of the following MSCP covered plant species occurring on site:

- Variegated dudleya: 56 percent of major populations and 75 percent of known localities would be conserved.
- San Diego button-celery: 82 percent of major populations and 88 percent of vernal pool habitat would be conserved.
- Spreading navarretia: 63 percent of major populations and 88 percent of vernal pool habitat would be conserved.
- San Diego barrel cactus: 81 percent of major populations would be conserved.

The project would result in cumulative impacts to variegated dudleya based on the size of the subpopulation to be impacted (3,465 individuals); however, these impacts are reduced to a level below significance with the preservation of species and appropriate habitat within the Lonestar Parcels, combined with translocation of individuals to the Lonestar Parcels.

The project would result in cumulative impacts to San Diego button-celery (3 individuals) and spreading navarretia (3 individuals) due to the small populations and limited distributions of these species, combined with the loss of suitable habitat (i.e., vernal pools) in the region. These impacts are reduced to a level below significance with the preservation of appropriate habitat within the Lonestar Parcels, translocation of individuals to the Lonestar Parcels, and creation of vernal pool habitat at the Lonestar Parcels.

Impacts to chocolate lily (4 individuals) are considered cumulatively significant due to the effects of numerous projects in the Otay Mesa area that have impacted this species. These impacts are reduced to a level below significance with the preservation of an existing population (approximately 50 individuals) within the Lonestar Parcels.

The 31 individuals of San Diego barrel cactus that would be impacted by the project would not be considered one of the major populations of this species, and the loss of these 31 individuals would not compromise the conservation of this species within the Subarea Plan. Table 3-5 of the MSCP Plan also refers to this species as "an abundant species that will be protected at varying levels in several subareas." As such, project impacts to this species are not considered cumulatively significant. Furthermore, the impacts to San Diego barrel cactus are fully mitigated with preservation of species and appropriate habitat within the Lonestar Parcels, and translocation of individuals to the Lonestar Parcels.

Impacts to small-flowered morning-glory, San Diego marsh-elder, and ashy spike-moss have a less than considerable contribution to the cumulative impact on these species due to the low numbers of individuals impacted, since these individuals are not part of major populations and the proposed impacts would not affect the regional long-term survival of these species. Furthermore, small-flowered morning-glory is included in the seed mix for restoration at the Lonestar Parcels, and San Diego marsh-elder would be adequately conserved through on-site translocation.

5.4.2 Sensitive Animal Species

Cumulative impacts to listed species (San Diego fairy shrimp, Riverside fairy shrimp, and Quino checkerspot butterfly) would occur as the project would contribute to the regional loss of suitable habitat for these species. However, these impacts would be reduced to a level below significance through the salvage and translocation of fairy shrimp inoculum to the Lonestar Parcels, and vernal pool and grassland habitat restoration and preservation on the Lonestar Parcels, which would result in (1) higher quality habitat for these species compared to the impacted areas, (2) preservation in perpetuity of these habitats, and (3) connectivity to other preserved lands.

Cumulatively significant impacts would occur to golden eagle, burrowing owl, northern harrier, and white-tailed kite since the project would further reduce the amount of foraging habitat available for these species. According to the EOMSP FEIR (County 1994), impacts to non-native grassland constitute a significant cumulative impact due to loss of raptor foraging habitat.

Cumulatively significant impacts would occur to the three following species not covered by the County's MSCP Subarea Plan (California horned lark, loggerhead shrike, and grasshopper sparrow) since the project would contribute to the incremental loss of grassland habitat in the region. These impacts would be significant but mitigated to less than significant through habitat-based mitigation on- and off-mesa.

Although not significant at the project level, cumulatively significant impacts would occur to the western spadefoot toad since the project would contribute to the overall loss of suitable breeding habitat (e.g., vernal pools) in the region. These impacts would be significant but mitigated to less than significant through habitat-based mitigation at the Lonestar Parcels.

Impacts to habitat for the two-striped garter snake would result in a less than considerable contribution to the cumulative impact to this species. The project would affect only marginal habitat for the two-striped garter snake, and impacts to one individual would not affect the regional long-term survival of the species. For these reasons, the project would not result in cumulative impacts to this species.

5.4.3 Vegetation Communities

As stated previously, impacts to non-native grassland constitute a significant cumulative impact due to loss of raptor foraging habitat (EOMSP FEIR [County 1994]). As a result, project impacts to grassland habitat would be considered cumulatively significant, and Significance Criterion 7 would be met.

Impacts to vernal pools would be cumulatively significant as project implementation would further contribute to the overall decline in number of vernal pools in the region; however, this impact would be reduced to a level below significance through restoration and preservation of vernal pool habitat at a minimum 3:1 ratio at the Lonestar Parcels, thus resulting in no net loss of habitat as well as preservation in perpetuity of these pools.

Impacts to 0.01 acre of non-jurisdictional freshwater marsh have a less than considerable contribution to the cumulative impact on this habitat in the region due to the small area involved, its human-induced origin, its negligible biological function as a wetland, and because it does not support substantial or locally important populations of wetland-dependent species.

5.4.4 Jurisdictional Areas

Impacts to vernal pools, fairy shrimp-occupied road pools, and ephemeral streambed would be cumulatively significant as project implementation would further contribute to the overall decline in acreage and distribution of vernal pools, occupied road pools, and streambed in the region; however, these impacts would be reduced to a level below significance through restoration and preservation of vernal pool habitat at a minimum 3:1 ratio at the Lonestar Parcels, and restoration of streambed at a minimum 1:1 ratio, thus resulting in no net loss of jurisdictional habitat.

5.4.5 Wildlife Movement/Corridors

The project site does not function as a wildlife corridor; thus no cumulatively significant impacts to wildlife movement would occur. The County's MSCP has resulted in the assemblage of a large swath of conserved lands located approximately two miles east of the site. This assemblage facilitates regional wildlife movement between the border, areas to the north, and the Otay River Valley.

5.4.6 Local Policies and Ordinances

The project would not conflict with the County's MSCP, BMO, or RPO, which are the applicable local policies and ordinances adopted to protect biological resources within the region. Other projects within the region would similarly be required to comply with the provisions of the MSCP, BMO, and RPO. As such, implementation of the proposed project would not result in any cumulatively significant impacts due to a conflict with local policies, ordinances, or adopted plans.

6.0 MITIGATION MEASURES

The project would cause direct and indirect impacts to sensitive vegetation communities, jurisdictional areas, and sensitive plant and animal species. The project applicant proposes to conduct mitigation for the loss of these sensitive resources with on-site preservation and restoration, purchase of off-site mitigation parcels, and restoration within those parcels. Two adjacent mitigation parcels, totaling 68.72 acres would be acquired at the Lonestar Ranch Property (Lonestar Parcels) located within the City of San Diego just east of SR-125 and north of Lonestar Road. Up to an additional 9.2 acres of land would be acquired, as necessary, from the Otay Crossings Lonestar parcels to achieve an overall target mitigation ratio of approximately 1:1 for grassland impacts. The Lonestar parcels are approximately three miles northwest of the project site within the same Otay Mesa burrowing owl sub-population as the project site. All of the habitat on the Lonestar Parcels supports or has potential to support burrowing owls: non-native grassland, vernal pools, road pools with fairy shrimp, and Diegan coastal sage scrub (Table 5). Other County sensitive species that occur on the Lonestar Parcels include decumbent goldenbush (*Isocoma menziesii* var. *decumbens*; a County List A species), graceful tarplant (*Holocarpha virgata* ssp. *elongata*; a County List D species), Otay Mesa mint (*Pogogyne nudiscula*; a federal and state listed Endangered species and a County List A species), variegated dudleya, San Diego button-celery, San Diego barrel cactus, and coastal California gnatcatcher (*Polioptila californica californica*; a County Group 1 species). Refer to Figures 9 and 10 for further information on mitigation.

Table 5
EXISTING VEGETATION COMMUNITIES ON THE LONESTAR PARCELS

Vegetation Community	Acreage
Vernal pool	0.65
Diegan coastal sage scrub	11.26
Road pool	0.01
Non-native grassland	56.80
TOTAL	**68.72**

The remaining mitigation lands would be acquired off Otay Mesa at a location approved by the County, USFWS, and CDFG. According to the BMO, mitigation must occur within the County's MSCP Subarea Plan. If the off-mesa mitigation would occur outside the County's MSCP Subarea Plan, an amendment to the County's MSCP Subarea Plan may be required. Since the project is required to complete a minor amendment to be included in the MSCP, the off-mesa mitigation site could be included in the amendment process to be included within the County's MSCP Subarea Plan. This process would follow the procedure laid out in Section 4.7 of the Subarea Plan and receive the concurrence of the wildlife agencies. The selected off-mesa mitigation site(s) would have the following characteristics:

- Support adequate acreage of grassland to meet the project requirements;
- Be occupied burrowing owl habitat or lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements;

LEGEND

Vegetation Communities

- Vernal Pool (44000)
- Saltgrass Grassland (42130)
- Non-native Grassland (42200)
- Disturbed Habitat (11300)
- Developed (12000)
- Freshwater Marsh -Disturbed (52400)
- Road Pool*

Sensitive Plants

Cs	Small-flowered Morning Glory *(Convolvulus simulans)*
Dv	Variegated Dudleya *(Dudleya variegata)*
Ea	San Diego Button Celery *(Eryngium aristulatum* var. *parishii)*
Fv	San Diego Barrel Cactus *(Ferocacutus viridescens)*
Fb	Chocolate Lily *(Fritillaria biflora)*
Ih	San Diego Marsh Elder *(Iva hayesiana)*
Sc	Ashy spike-moss *(Selaginella cinerascens)*

Sensitive Animals

BUOW	Burrowing Owl *(Athene cunicularia)*
BUOW-B	Burrowing Owl Burrow
GRSP	Grasshopper Sparrow *(Ammodramus savannerum)*
HOLA	California Horned Lark *(Eremophila alpestris actia)*
LOSH	Loggerhead Shrike *(Lanius ludovicianus)*
NOHA	Northern Harrier *(Circus cyaneus)*
QCBU	Quino Checkerspot Butterfly *(Euphydras editha quino)*
RIFS	Riverside Fairy Shrimp *(Streptocephalus woottoni)*
SDFS	San Diego Fairy Shrimp *(Branchinecta sandiegonensis)*
TSGS	Two-striped Garter Snake *(Thamnophis hammondii)*
WESP	Western Spadefoot Toad *(Spea hammondii)*
WTKI	White-tailed Kite *(Elanus leucurus)*

Other

- Watershed
- Extent of Sensitive Resource
- Streambed/WUS Mitigation
- Grassland and Burrowing Owl Mitigation
- Limited Building Zone (40 ft)
- U.S./Mexico Border

* Road Pool does not have a Holland code.

Off-site Impacts

Project Site

Airway Road

Enrico Fermi Drive

Enrico Fermi Place

Siempre Viva Road

Via De La Amistad

Rip-rap

N W E S

500 250 0 500 Feet

Job No: PGN-01 Date: 06/18/10

Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

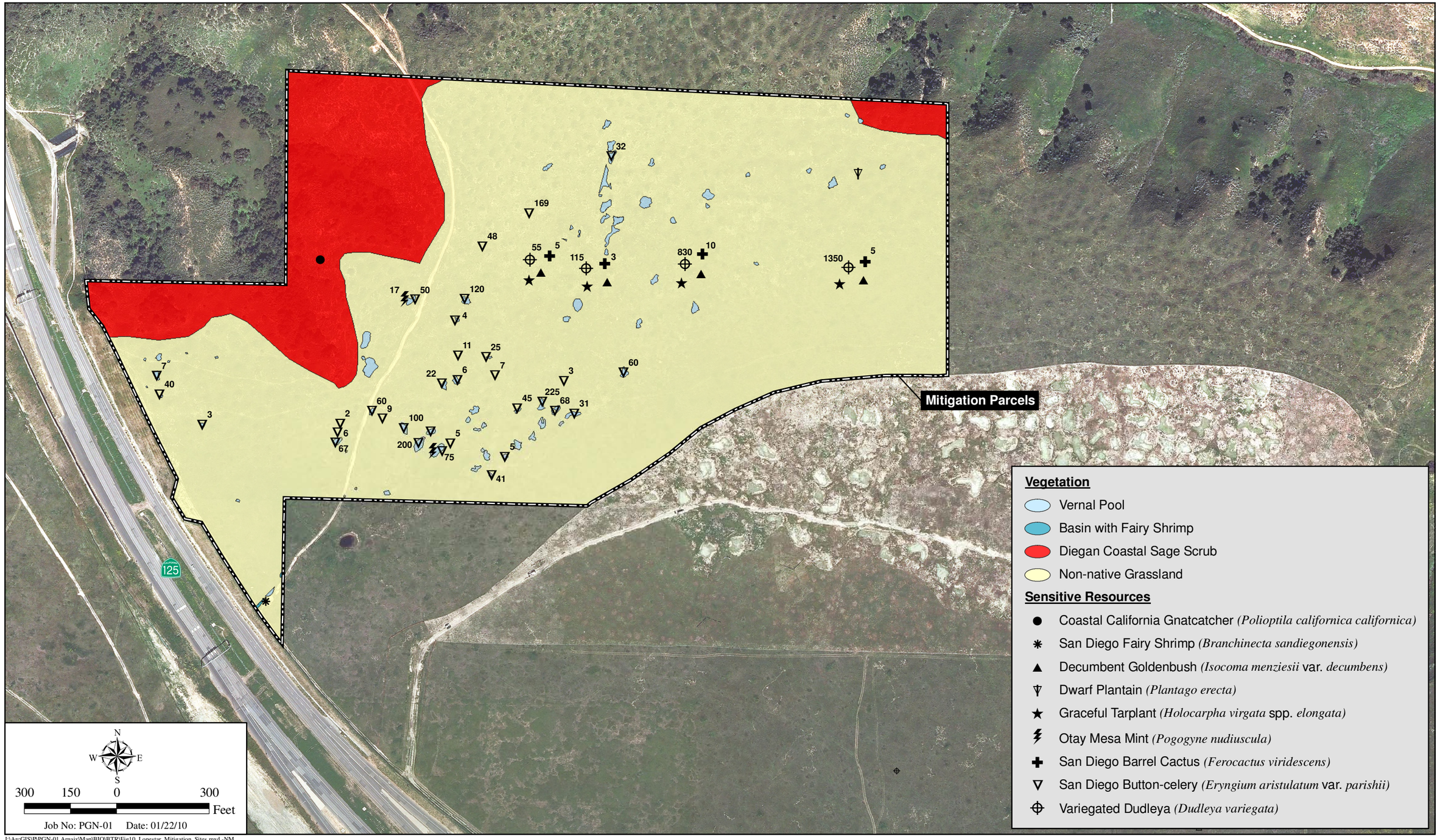
I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig9_ChannelMitigation.mxd -NM

On-site Mitigation

OTAY BUSINESS PARK

Figure 9

HELIX



I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig10_Lonestar_Mitigation_Sites.mxd -NM

Lonestar Mitigation Parcels

OTAY BUSINESS PARK

Figure 10

- Be free of encumbrances that would preclude a conservation easement;
- Contribute to the long-term persistence of sensitive biological resources in the region; and
- Provide suitable habitat for multiple resources, including sensitive plant species, which could be transplanted or restored, if necessary.

The following mitigation measures have been designed in coordination with and approved by County, USFWS, and CDFG staff.

6.1 MITIGATION FOR DIRECT IMPACTS

The mitigation analysis is based on the project as a stand-alone project, independent of the Otay Crossings project. Impacts associated with off-site road improvements are assumed based on the current status of these areas. If any feature is required to be built by other projects, including the Otay Crossings project, and is constructed prior to the proposed project needing to construct those facilities, mitigation shall not be required of the proposed project for those overlapping areas already impacted by other projects.

6.1.1 Vegetation Communities

Impact The project would cause permanent, direct impacts to sensitive vegetation communities both on and off site, including eight vernal pools totaling 0.14 acre, 0.01 acre of freshwater marsh, 0.19 acre of saltgrass grassland, 163.41 acres of non-native grassland, and 0.10 acre of road pools occupied by endangered fairy shrimp.

Mitigation Mitigation for impacts to vernal pools and road pools with fairy shrimp would occur on mesa with vernal pool watershed restoration at the Lonestar Parcels, which support 0.65 acre of vernal pools and 0.01 acre of road pools. Additionally, the project would create/restore 0.41 acre of vernal pools within the Lonestar Parcels. The total mitigation (1.07 acres) would be 0.35 acre more than that required to meet a 3:1 mitigation ratio (Table 6). Additionally, the mitigation program includes restoration of approximately 4.50 acres of vernal pool watershed. The restoration area will be temporarily fenced with 3-strand non-barbed wire until the area meets success criteria.

Mitigation for impacts to freshwater marsh would occur through purchase of credits from the Rancho Jamul mitigation bank.

Impacts to saltgrass grassland and non-native grassland would be mitigated together with a combination of restoration and preservation. Mitigation for impacts to saltgrass grassland would occur on mesa at a 2:1 mitigation ratio (0.38 acre) and mitigation for impacts to non-native grassland would target an approximately 1:1 ratio (161.15 acres), which is greater than that normally used because the entire project site is considered occupied by burrowing owls. The 0.38 acre of saltgrass grassland mitigation would be incorporated into the upland/watershed restoration around the restored vernal pools on the Lonestar Parcels. The mitigation program approved by the County and wildlife agencies requires at least half of the mitigation

for non-native grassland to occur on Otay Mesa (on mesa) and allows the remainder to occur off of Otay Mesa (off mesa). As a result, the mitigation ratio would be split, with approximately half (79.45 acres) of the non-native grassland mitigation occurring on mesa and approximately half (81.70 acres) occurring off mesa.

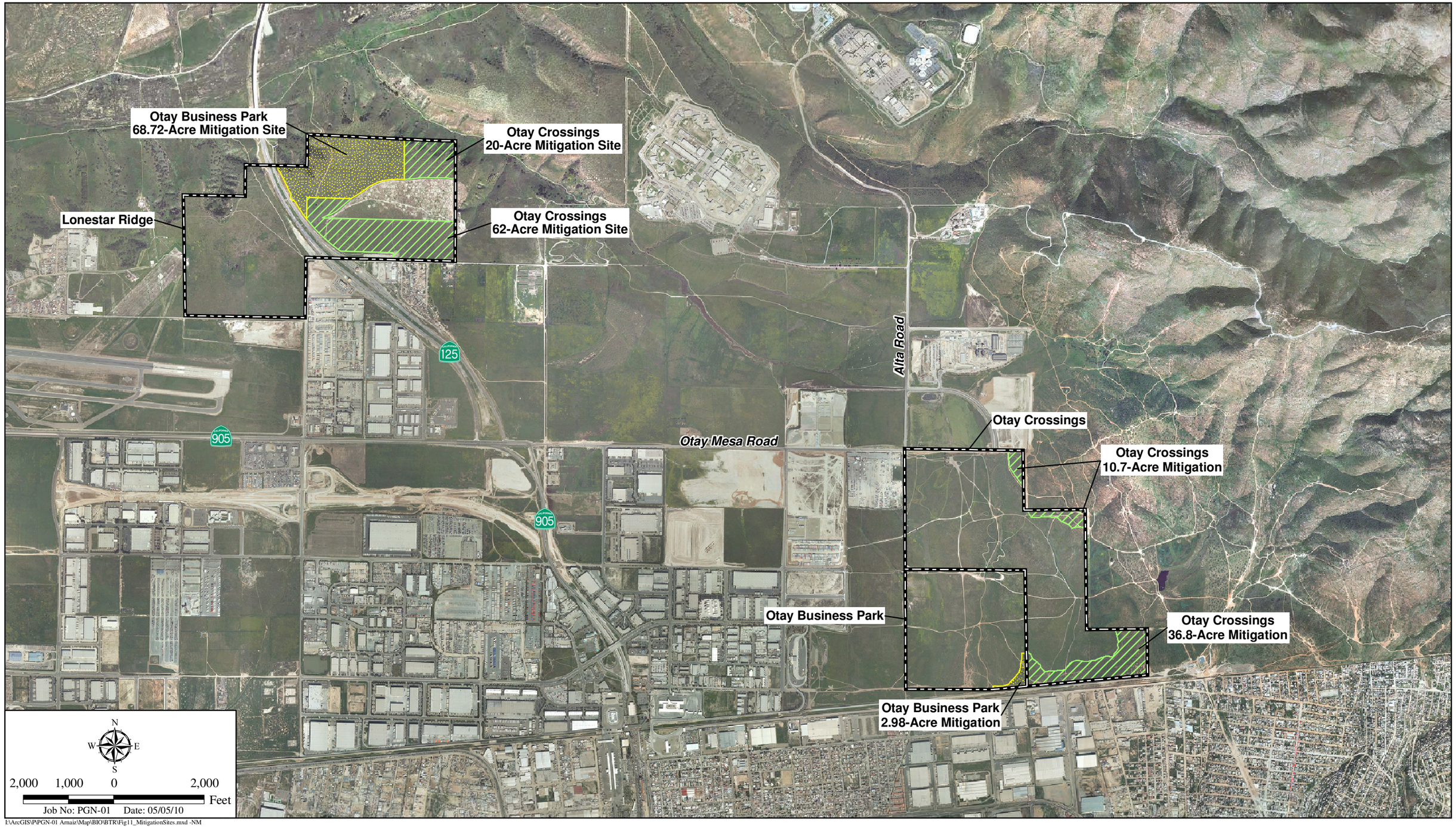
On-mesa grassland mitigation for the stand-alone proposed project would consist of the following:

- 2.98 acres of habitat in the southeastern corner of the Otay Business Park site (Figure 11). An existing drainage channel will be realigned through this area and seeded with grassland species. Developed habitat in this area consists of decomposed granite (DG) spread out over an existing dirt road. The DG will be removed and the underlying area will be allowed to revegetate as non-native grassland. Disturbed habitat will remain as is. The northern portion of the channel, as well as areas where riprap is proposed, are not included in the 2.98 acre area.
- 67.65 acres of grassland mitigation would be achieved with the preservation and restoration of habitat within the Lonestar Parcels (including 0.38 acre of native grassland restoration and 67.27 acre of non-native grassland mitigation).

The above on mesa mitigation for non-native grassland totals 70.25 acres (on site and Lonestar). Up to an additional 9.2 acres of grassland mitigation would be acquired from the Otay Crossings portion of the Lonestar parcel in order to reach an approximately 0.5:1 on mesa mitigation ratio. In addition to the on mesa mitigation, approximately 81.70 acres of grassland mitigation would be achieved off mesa at a location approved by the County, USFWS, and CDFG.

Implementation of these measures would provide approximately 79.45 acres of non-native grassland mitigation on mesa and approximately 81.70 acres of non-native grassland mitigation off mesa. Thus, the overall mitigation ratio for non-native grassland impacts for the proposed project is 0.99:1 (approximately 1:1). The mitigation proposed assumes that the proposed project moves forward as a stand-alone project.

If both the proposed project and adjacent Otay Crossings project go forward, the overlap of non-native grassland impacts and native grassland impacts would be shared between the two projects, and the resulting mitigation obligation would be split between the two parties. The overlap of native grassland would be 0.1 acre, while the overlap of non-native grassland would depend on the Sewer Option selected by Otay Crossings. Sewer Option A would result in 18.02 acres of non-native grassland overlap. Sewer Options B1 and B2 each would result in 21.94 acres of non-native grassland overlap. Sewer Option A is the preferred option for the Otay Crossings project (Figure 12) and is further discussed below. A total of 196.65 acres of on mesa non-native grassland mitigation is available for the proposed project and the Otay Crossings project combined. This includes 70.25 acres for the proposed project (2.98 acres on site and 67.27 acres at Lonestar) and 126.4 acres for Otay Crossings (44.4 acres on site and 82 acres at



I:\ArcGIS\P\PGN-01 Arnaiz\Map\BIO\BTR\Fig11_MitigationSites.mxd -NM

On Mesa Mitigation-Otay Business Park and Otay Crossings

OTAY BUSINESS PARK

HELIX

Figure 11

Project Overlap with Otay Crossings - Option A

OTAY BUSINESS PARK

HELIX

Figure 12

Lonestar). The total combined non-native grassland impacts are 408.78 acres for Sewer Option A. The combined projects would result in an overall combined on mesa mitigation ratio of 0.48:1 for the two projects. If the Otay Crossings project is constructed prior to the proposed project, mitigation shall not be required of the proposed project for those overlapping areas already impacted by Otay Crossings.

Table 6
MITIGATION FOR IMPACTS TO VEGETATION COMMUNITIES (Acres)

VEGETATION COMMUNITY	IMPACTS	TARGET RATIO	PROPOSED MITIGATION		
			On Mesa	Off Mesa	Total
Vernal/Road pool	0.24	3:1	1.07[1]	0.00	1.07
Freshwater marsh	0.01	3:1	0.00	0.03	0.03
Saltgrass grassland	0.19	2:1	0.38[2]	0.00	0.38
Non-native grassland	163.41	1:1	79.45[3]	81.70	161.15
Disturbed habitat	10.19	--	--	--	--
Developed	1.27	--	--	--	--
TOTAL	**175.31**	**--**	**80.90**	**81.73**	**162.63**

[1] Off site at the 68.72-acre Lonestar Parcels. Includes 0.66 acre of vernal pool preservation and 0.41 acre of vernal pool restoration.
[2] Off site at the 68.72-acre Lonestar Parcels
[3] Includes 2.98 acres on site, 67.27 acres off site at the Lonestar Parcels (reached by subtracting 0.38 acre of native grassland restoration and 1.07 acre vernal pool preservation/restoration from the 68.72-acre parcels), and up to 9.2 acres of land to be acquired from the Otay Crossings mitigation parcel at Lonestar.

In addition to the above, the applicant shall dedicate Limited Building Zone Easements to protect all open space easements from predictable future fire clearing in accordance with the approved Fire Protection Plan (lots adjacent to the realigned drainage channel have Limited Building Zones of 40 feet [Figure 9]). The easement shall preclude the building of habitable structures that would require fire clearing into the open space easement.

6.1.2 Jurisdictional Areas

Impact

The project applicant proposes impacts to Corps and CDFG jurisdictional areas as follows:

Corps: 0.19 acre of unvegetated non-wetland Waters of the U.S. (ephemeral streambed and pond), 0.14 acre of vernal pools, and 0.10 acre of road pools supporting endangered fairy shrimp. The vernal and road pools are considered Corps jurisdictional due to a hydrological connection between pools on site and the ephemeral streambed.

CDFG: 0.19 acre of streambed, and 0.01 acre ephemeral pond.

Mitigation The project applicant proposes to mitigate impacts to ephemeral streambed/pond through a combination of the following: (1) creation of 0.20 acre of ephemeral, non-wetland Waters of the U.S. within the realigned drainage channel on site, (2) preservation of 0.20-acre of ephemeral drainages on the Lonestar Parcels, and (3) restoration of 0.40 acre of non-wetland Waters of the U.S. within the Rancho Jamul Wetland Mitigation Bank. As described in Section 1.3, the realigned drainage channel would be preserved as an open, soft-bottomed channel that would route runoff flows from the eastern portion of the project site and discharge to the south. As described in Section 6.1.1, impacts to vernal pools and road pools would be mitigated with vernal pool watershed restoration at the Lonestar Parcels, which contain 68.72 acres of vegetation (mostly non-native grassland) designated as San Diego Fairy Shrimp Critical Habitat. The total mitigation (1.07 acres) would be met with preservation of 0.66 acre and creation/restoration of 0.41 acre of vernal pools (Table 6). Additionally, approximately 4.50 acres of vernal pool watersheds would be restored.

6.1.3 Sensitive Plant Species

Impact The proposed project would impact an estimated 3,465 variegated dudleya, 3 San Diego button-celery, 3 spreading navarretia, 31 San Diego barrel cactus, 4 chocolate lily, and 11 San Diego marsh-elder individuals.

Mitigation The project applicant proposes to mitigate impacts to variegated dudleya, San Diego button-celery, spreading navarretia, San Diego barrel cactus, and San Diego marsh-elder through the salvage and translocation of the on site populations. Salvaged variegated dudleya, San Diego button-celery, spreading navarretia, and San Diego barrel cactus would be translocated to the Lonestar Parcels and incorporated into the vernal pool and vernal pool watershed creation and restoration effort. Variegated dudleya, San Diego button-celery, and San Diego barrel cactus have all been reported in grassland habitat on or adjacent the Lonestar Parcels (HELIX 2009), so the habitat in these areas would be appropriate to support the translocated plants.

Salvaged San Diego marsh-elder would be translocated to the realigned drainage channel on site, and will be installed on the slopes adjacent to the proposed riprap bottom, within the area to be designated as open space. Container stock San Diego marsh-elder also will be installed in this area.

A Sensitive Species Translocation Plan has been prepared and will be submitted to the County for approval prior to issuance of any grading permit.

Impacts to chocolate lily would be mitigated with the above-referenced preservation of 68.72 acres of habitat at the Lonestar Parcels. Approximately 50 chocolate lily individuals have been mapped on the Lonestar Parcels.

6.1.4 Sensitive Animal Species

Impact In total, approximately 0.14 acre of vernal pools and 0.10 acre of road pools supporting endangered fairy shrimp would be impacted by the proposed project.

Mitigation As described in Section 6.1.1, mitigation for impacts to vernal and road pools would occur with vernal pool watershed restoration at the Lonestar Parcels, which support 0.66 acre of vernal pools. Additionally, the project would create/restore 0.41 acre of vernal pools within the Lonestar Parcels. The Lonestar Parcels contain 68.72 acres of vegetation (mostly non-native grassland) designated as San Diego Fairy Shrimp Critical Habitat. The total mitigation (1.07 acres) would be 0.35 acre more than that required to meet a 3:1 mitigation ratio. Additionally, the mitigation program includes restoration of approximately 4.50 acres of vernal pool watersheds. The project applicant proposes to mitigate impacts to San Diego and Riverside fairy shrimp at a 3:1 ratio in conjunction with the vernal and road pool mitigation identified above. This mitigation would be described in a mitigation and monitoring plan and would include salvage of soil containing fairy shrimp cysts in the impacted pools and using it to inoculate a minimum of 0.72 acre of created/restored pools with San Diego and Riverside fairy shrimp.

Impact The project would impact non-native grassland in which a single Quino checkerspot butterfly was observed (URS 2005).

Mitigation Because of the low quality habitat on site and small population (one individual observed), the focus of the mitigation effort is on preservation/restoration of appropriate Quino checkerspot butterfly habitat off site, as opposed to any direct attempt at establishing a new population. The project applicant proposes to mitigate for the loss of the Quino checkerspot butterfly through preservation of historically occupied habitat on the Lonestar Parcels, both of which have been designated as Quino checkerspot butterfly Critical Habitat. Additionally, host plant species and adequate nectar plants would be included in the vernal pool watershed restoration effort. Such measures would improve the habitat value of these historically occupied parcels for the Quino checkerspot butterfly.

Impact The project would impact seven occupied burrowing owl burrows and approximately 163.6 acres of occupied habitat.

Mitigation No grading may occur within occupied habitat during the burrowing owl breeding season (February 15 through August 15). Outside the breeding season, a pre-construction survey to identify the known active burrows would be conducted no more than seven days prior to initiation of construction. Weed removal (by whacking, bush hogging, or mowing) would be conducted, under the guidance of a qualified biological monitor, to make all potential burrows more visible to avoid injuring owls by burrow collapse. If owls were present in the burrows, a qualified biologist would implement passive relocation measures (installation of one-way doors) in accordance with CDFG regulations (CDFG 1995). Once all owls have vacated the burrows (approximately 48 hours), a qualified biologist would oversee the excavation and filling of the burrows.

According to the BMO:

> [m]itigation for impacts to the occupied habitat must be through the conservation of occupied burrowing owl habitat or lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements at a ratio of no less than 1:1 for the territory of the burrowing owl.

The project applicant proposes to mitigate impacts to occupied burrowing owl habitat with preservation of habitat in the southeastern corner of the site combined with the previously described habitat acquisition at the Lonestar Parcels, as well as other off-site non-native grassland. Suitable habitat occurs throughout the Lonestar Parcels, and burrowing owls have been reported in a number of locations in the vicinity. To ensure suitable burrow opportunities are present within the mitigation area, artificial burrows will be included in the vernal pool watershed restoration effort.

Impact The project would impact habitat supporting California horned lark, loggerhead shrike, white-tailed kite, and northern harrier. It also would impact a portion of the foraging habitat of a known pair of golden eagles.

Mitigation The project applicant proposes to mitigate impacts to California horned lark, loggerhead shrike, white-tailed kite, northern harrier, and golden eagles concurrently with mitigation for non-native grassland impacts. Furthermore, the Lonestar Parcels are within the foraging habitat for the same pair of golden eagles and the habitat value for foraging would be improved with the proposed restoration efforts.

6.2 INDIRECT IMPACTS

6.2.1 Fugitive Dust

Impacts Fugitive dust produced by construction could disperse onto native vegetation and reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. This in turn could affect animals dependent on these plants for food or shelter.

Mitigation In order to mitigate for indirect impacts to wildlife due to fugitive dust, watering of unpaved surfaces shall occur during grading activities, per County standards.

6.2.2 Construction Noise

Impact Project-related construction noise has potential to cause indirect impacts to breeding or nesting birds, including ground-nesting raptors and burrowing owls.

Mitigation All brushing, grading, and clearing of vegetation shall take place outside of the bird breeding season (February 15 through August 31). No construction activities may occur within 300 feet of burrowing owl burrows or within 800 feet of ground

dwelling raptor nests until a qualified biologist determines that they are no longer active or it is determined that noise levels would not exceed 60 dB L_{eq} at the nest site. Alternatively, noise minimization measures such as noise barriers could be constructed to bring noise levels to below 60 dB L_{eq}, which will reduce impacts to below a level of significance.

6.2.3 Animal Behavioral Changes

Impact Breeding birds and mammals may temporarily or permanently leave their nests and territories to avoid construction activity, which could reduce reproductive success and increase mortality.

Mitigation No brushing, grading, or clearing of vegetation shall occur from February 15 through August 31, the primary breeding period for birds and mammals.

6.2.4 Errant Construction Impacts

Impact Errant grading or clearing beyond the proposed construction limits could impact sensitive vegetation communities or species intended for preservation.

Mitigation Prior to construction, orange construction fencing would be installed within the proposed limits of impact to clearly define the grading boundaries and prevent unintended impacts.

6.2.5 Water Quality

Impact Water quality in riparian areas can be adversely affected by potential surface runoff and sedimentation during construction. The use of petroleum products (e.g., fuels, oils, and/or lubricants) and erosion of cleared land during construction could potentially contaminate surface water. Decreased water quality may adversely affect vegetation, aquatic animals, and terrestrial wildlife that depend upon these resources.

Mitigation To prevent otherwise significant water quality impacts, the project would comply with San Diego County Zoning, Storm Water, and Land Use regulations. Project design would implement erosion, sedimentation, and pollution control measures that would prevent a reduction in water quality in off-site streams and wetlands.

6.2.6 Non-native Plant Species

Impact Non-native plants could colonize sites disturbed by construction and could potentially spread into adjacent native habitats, especially following a disturbance such as fire. Many of these non-native plants are highly invasive and can displace native vegetation reducing native species diversity, potentially increase flammability and fire frequency, change ground and surface water levels, and potentially adversely affect native wildlife that is dependent on the native plant species.

Mitigation Because the majority of project site and most of the surrounding area is characterized by non-native grassland, spread of non-native plant species during construction is not anticipated to cause a significant impact. The project's landscape plan also would exclude any invasive plant species, particularly those listed as highly invasive by Cal-IPC.

6.2.7 Human Activity

Impact Increases in human activity in the area could result in degradation of sensitive vegetation through habitat fragmentation, formation of additional edges through unauthorized road or trail creation, removal of existing vegetation, or illegal dumping.

Mitigation The project is an industrial development and would develop the entire site, so no increase in human activity in adjacent undeveloped areas is anticipated. However, in order to prevent intrusion of people into on- and off-site open space preserve and/or restoration areas, a fencing plan shall be implemented.

6.2.8 Nuisance Animal Species

Impact Nuisance animal species, particularly domestic cats are known to impact native wildlife.

Mitigation Because the project is an industrial development rather than a residential development, nuisance animals are not anticipated to cause an impact, thus no mitigation is proposed.

6.2.9 Night Lighting

Impact Night lighting may expose wildlife species to an unnatural light regime and alter their behavior patterns, and may result in a loss of species diversity.

Mitigation An outdoor lighting plan will be prepared that directs all construction and security lighting be shielded or directed away from any adjacent open space.

7.0 LIST OF PREPARERS

The following individuals contributed to the preparation of this report.

Greg Mason	B.S., Natural Resources Planning & Interpretation, Humboldt State University, 1992 County-approved biologist
Nathan Mendenhall	M.S. Geography, San Diego State University, 2008 B.S. Geography, Brigham Young University, 2003
Stacy Nigro	B.S., Wildlife Ecology, University of Florida, 1994
Brian Parker	M.A., Biology, University of California at Los Angeles, 1996 B.S., Ecology, Behavior, and Evolution, University of California-San Diego, 1992
Phillip Tran	J.D., Law, Seattle University School of Law, 2001 M.A., Communication, San Diego State University, 1998 B.A., Political Science, University of California-San Diego, 1994

8.0 REFERENCES

American Ornithologists' Union. 1998. Checklist of North American Birds, 7th Edition. 829 pp. Supplemented near-annually online from The Auk. URL: http://www.aou.org/checklist/index.php3.

Baker, R.J., L.C. Bradley, R.D. Bradley, J.W. Dragoo, M.D. Engstrom, R.S. Hoffmann, C.A. Jones, F. Reid, D.W. Rice, and C. Jones. 2003. Revised checklist of North American mammals north of Mexico. Occasional Papers of the Museum, Texas Tech University 223.

Bowman, R. 1973. Soil Survey of the San Diego Area. USDA in cooperation with the USDI, UC Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

California Department of Fish and Game (CDFG). 1995. Environmental Services Division. Staff Report on Burrowing Owl Mitigation. October 17. 8pp. plus attachments.

California Invasive Plant Council (Cal-IPC). 2006. Cal-IPC Invasive Plant Inventory. URL: http://portal.cal-ipc.org/weedlist.

CDFG California Natural Diversity Database. 2006a. State and Federally Listed Endangered, Threatened, and Rare Plants of California. State of California, The Resources Agency, Habitat Conservation Division, Wildlife & Habitat Data Analysis Branch. URL: http://www.dfg.ca.gov/whdab/pdfs/TEPlants.pdf. May.

2006b. State and Federally Listed Endangered and Threatened Animals of California. State of California, The Resources Agency, Department of Fish and Game Biogeographic Data Branch. URL: http://www.dfg.ca.gov/whdab/pdfs/TEAnimals.pdf. April.

California Native Plant Society (CNPS). 2006. Inventory of Rare and Endangered Plants. Internet searchable database Version 7-06b. URL: http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi. April 18.

Collins, Joseph T. and Travis W. Taggart. 2002. Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians (Fifth Edition). Publication of The Center for North American Herpetology, Lawrence, Kansas. iv + 44 pp.

County of San Diego. 1994. East Otay Mesa Specific Plan. July.

1997. Multiple Species Conservation Program, County of San Diego Subarea Plan. October 22.

2007. Resource Protection Ordinance. Ordinance No. 9842 (New Series): An Ordinance Codifying and Amending the Resource Protection Ordinance, Relating to Wetlands, Prehistoric and Historic Sites, Agricultural Operations, Enforcement, and Other Matters. Updated from 1991 Ordinances compilation. March 21.

County of San Diego (cont.)

2007. Guidelines for Determining Significance. Department of Planning and Land Use. December 5. Desmond, M.J., J.A. Savidge, and T.F. Seibert. 1995. Spatial patterns of burrowing owl (*Speotyto cunicularia*) nests within black-tailed prairie dog (*Cynomys ludovianus*) towns. Canadian Journal of Zoology 73: 1375-1379.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.

Haug, E.A., and L.W. Oliphant. 1990. Movements, activity patterns, and habitat use of burrowing owls in Saskatchewan. Journal of Wildlife Management 54: 27-35.

HELIX Environmental Planning, Inc. (HELIX). 2000. U.S. Fish and Wildlife Service Protocol Level Dry Season Survey Report for San Diego and Riverside Fairy Shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*). December 15.

2001a. U.S. Fish and Wildlife Service Protocol Level Results Report of Dry Season Survey for San Diego and Riverside Fairy Shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*). Prepared for the City of San Diego State Route 11 Extension. December 10.

2001b. U.S. Fish and Wildlife Service Protocol Level Results 90-Day Report of Wet Season Survey for San Diego and Riverside Fairy Shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*) Within the State Route 11 Extension Study Area. July 20.

2002. State Route 11 Study Area Existing Conditions Report. March 1.

2006. U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). State Route 11 Study Area. In progress as of June 12.

2008a. U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). Prepared for Lonestar Ridge (122-acre Development Area and 151-acre Open Space), McMillin Land Development Company. May 30.

2008b. Jurisdictional Delineation Report for Otay Business Park. August 13.

2009. Biological Technical Report for Lonestar Industrial Park. May 22.

Hickman, J.C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley. 1400 pp.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento, 156 pp.

Jackson, L. 1985. Ecological origins of California's Mediterranean grasses. Journal of Biogeography 12: 349-361.

Martin, D.C. 1973. Selected aspects of burrowing owl ecology and behavior. Condor 75: 446-456

Mayer, Dave. 2006. CDFG personnel. Personal communication with Barry L. Jones of HELIX Environmental Planning, Inc. Multiple dates.

Oberbauer, T. 1996. Terrestrial vegetation communities in San Diego County based on Holland's Descriptions. San Diego Association of Governments, San Diego, California. 6 pp.

Otay Business Park, LLC. 2007. Follow-up Information re Vernal Pool RPO Status on the Otay Business Park Site (TM5505). December 7.

Rebman, Jon P. and Michael G. Simpson. 2006. Checklist of the Vascular Plants of San Diego County, 4th Edition. San Diego Natural History Museum and San Diego State University.

San Diego Natural History Museum. 2002 Butterflies of San Diego County. URL: http://www.sdnhm.org/research/entomology/sdbutterflies.html. Accessed May 2008.

Simovich, M. 1990. Sensitive faunal elements of the vernal pools of Otay Ranch. A report to Michael Brandman and Associates. Prepared by Biology Department, University of San Diego. May 16.

Studt, J.F. 1991. Memorandum: Questions and Answers on 1987 Manual. U.S. Army Corps of Engineers. October 7.

Thomsen, L. 1971. Behavior and ecology of burrowing owls on the Oakland Municipal Airport. Condor 73: 177-192.

URS. 2005. Natural Environment Study, State Route 11, East Otay Mesa, California. November 3.

U.S. Army Corps of Engineers (Corps). 1997. Vernal Pool Plant Indicator Species List. November.

U.S. Fish and Wildlife Service (USFWS). 1996a. Branch of Habitat Assessment. National List of Plant Species that Occur in Wetlands. URL: http://www.nwi.fws.gov/bha/ (in downloadable .pdf format).

1996b. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods. April 19.

2002a. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 2002 Survey Protocol Information. February.

2002b. Quino Checkerspot Butterfly 2002 Survey Recommendations. February 12.

Williams, A.E. 1992. Memorandum: Clarification and Interpretation of the 1987 Manual. U.S. Army Corps of Engineers. March 6.

APPENDIX A

PLANT SPECIES OBSERVED

Appendix A
PLANT SPECIES OBSERVED – OTAY BUSINESS PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
PTERIDIOPHYTE			
Selaginellaceae	*Selaginella cinerascens*	ashy spike-moss	NNG
ANGIOSPERMS – MONOCOTS			
Cyperaceae	*Eleocharis macrostachya*	pale spike-rush	VP
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	NNG
Liliaceae	*Bloomeria crocea* var. *crocea*	golden star	NNG
	Chlorogalum parviflorum	small-flower soap-plant	NNG
	Dichelostemma capitatum	blue dicks	NNG
	Fritillaria biflora	chocolate lily	NNG
	Muilla clevelandii	San Diego goldenstar	NNG
	Zigadenus fremontii	star-lily	NNG
Poaceae	*Achnatherum coronatum*	giant stipa	NNG
	Avena barbata	slender wild oat	NG, NNG
	Bromus diandrus	common ripgut grass	NNG
	Bromus hordeaceus	soft chess	NNG
	Bromus madritensis ssp. *rubens*	foxtail chess	NNG
	Distichlis spicata	saltgrass	NG
	Gastridium ventricosum	nit grass	NNG
	Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	NNG
	Lamarckia aurea	goldentop	NNG
	Leymus condensatus	giant wild rye	NNG
	Lolium multiflorum	Italian ryegrass	NNG
	Lolium perenne	English ryegrass	NNG
	Polypogon monspeliensis	rabbitfoot grass	NG, NNG
	Schismus barbatus	Mediterranean grass	NNG, DH
ANGIOSPERMS – DICOTS			
Apiaceae	*Daucus pusillus*	rattlesnake weed	NNG
	Eryngium aristulatum var. *parishii*	San Diego button-celery	VP
	Foeniculum vulgare	fennel	NNG
	Sanicula arguta	sharp-tooth sanicle	NNG
Asteraceae	*Achyrachaena mollis*	blow-wives	NNG
	Anthemis cotula	mayweed	NNG
	Artemisia californica	California sagebrush	NNG
	Baccharis salicifolia	mule fat	NNG
	Baccharis sarothroides	broom baccharis	NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED – OTAY BUSINESS PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
ANGIOSPERMS – DICOTS (cont.)			
Asteraceae (cont.)	*Centaurea melitensis*	star thistle	NNG
	Conyza canadensis	horseweed	NNG
	Cotula australis	Australian brass-buttons	NNG
	Cynara cardunculus	cardoon	NNG
	Deinandra fasciculata	fascicled tarplant	NNG
	Filago californica	California filago	NNG
	Filago gallica	narrow-leaf filago	NNG
	Gazania sp.	gazania	NNG
	Gnaphalium sp.	cudweed	NNG
	Grindelia camporum var. *bracteosum*	gum plant	NNG
	Hedypnois cretica	Crete hedypnois	NNG
	Helianthus annuus	western sunflower	NNG
	Hypochaeris glabra	smooth cat's-ear	NNG
	Iva hayesiana	San Diego marsh-elder	NNG
	Lasthenia californica	goldfields	NNG
	Psilocarphus brevissimus var. *brevissimus*	dwarf woolly-heads	NNG
	Sonchus asper	prickly sow thistle	NNG
	Sonchus oleraceus	common sow thistle	NNG
Boraginaceae	*Amsinckia menziesii* var. *intermedia*	rancher's fiddleneck	NNG
	Plagiobothrys sp.	popcorn flower	NNG
Brassicaceae	*Brassica nigra*	black mustard	NNG
	Brassica rapa	field mustard	NNG
	Hirschfeldia incana	perennial mustard	NNG
Cactaceae	*Ferocactus viridescens*	San Diego barrel cactus	NNG
Capparaceae	*Isomeris arborea*	bladderpod	NNG
Chenopodiaceae	*Atriplex semibaccata*	Australian saltbush	NNG
	Salsola tragus	Russian thistle	NNG, DH
Convolvulaceae	*Calystegia sumulans*	finger-leaf morning-glory	NNG
	Crassula aquatica	common pygmyweed	VP
Crassulaceae	*Dudleya variegata*	variegated dudleya	NNG, DH
Cucurbitaceae	*Marah macrocarpus*	wild cucumber	NNG
Euphorbiaceae	*Chamaesyce polycarpa*	desert sand mat	NNG
Fabaceae	*Lotus scoparius*	deerweed	NNG
	Melilotus alba	white sweet clover	NNG
	Melilotus indica	Indian sweet clover	NNG
	Trifolium sp.	clover	NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED – OTAY BUSINESS PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
ANGIOSPERMS – DICOTS (cont.)			
Geraniaceae	*Erodium botrys*	long-beak filaree	NNG
	Erodium brachycarpum	short-beak filaree	NNG
	Erodium cicutarium	red-stem filaree	NNG, DH
Lamiaceae	*Marrubium vulgare*	horehound	NNG
Malvaceae	*Malva parviflora*	cheeseweed	NNG
	Malvella leprosa	alkali-mallow	VP
	Sidalcea malviflora ssp. *sparsifolia*	checker-bloom	NNG
Nyctaginaceae	*Mirabilis californica*	wishbone bush	NNG
Plantaginaceae	*Plantago erecta*	dwarf plantain	NNG
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat	NNG
Primulaceae	*Anagallis arvensis*	scarlet pimpernel	NNG
	Dodecatheon clevelandii	shooting stars	NNG
Scrophulariaceae	*Castilleja exserta*	purple owl's clover	NNG
Verbenaceae	*Verbena lasiostachys*	verbena	VP

‡Habitat acronyms: DH=disturbed habitat, NG=native grassland, NNG=non-native grassland, VP=vernal pool

APPENDIX B

ANIMAL SPECIES OBSERVED

Appendix B
ANIMAL SPECIES OBSERVED – OTAY BUSINESS PARK

SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES	
Apodemia vergulti	Behr's metalmark
Coenonympha californica	common California ringlet
Erynnis funeralis	funereal duskywing
Euphydryas editha quino†	Quino checkerspot butterfly
Papilio zelicaon	Anise swallowtail
*Pieris rapae**	cabbage white butterfly
Pyrgus albescens	western checkered skipper
Vanessa cardui	painted lady
Vannessa annabella	west coast lady
Branchinecta sandiegonensis†	San Diego fairy shrimp
Streptocephalus woottoni†	Riverside fairy shrimp
VERTEBRATES	
Amphibians	
Pseudacris regilla	Pacific treefrog
Spea hammondii†	western spadefoot toad
Reptiles	
Sceloporus occidentalis	western fence lizard
Uta stansburiana	common side-blotched lizard
Birds	
Ammodramus savannarum†	grasshopper sparrow
Agelaius phoeniceus	red-winged black bird
Aquila chrysaetos†‡	golden eagle
Athene cunicularia†	burrowing owl
Calypte anna	Anna's hummingbird
Carpodacus mexicanus	house finch
Circus cyaneus†	northern harrier
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Elanus leucurus†	white-tailed kite
Eremophila alpestris actia†	California horned lark

Appendix B (cont.)
ANIMAL SPECIES OBSERVED – OTAY BUSINESS PARK

SCIENTIFIC NAME	**COMMON NAME**
VERTEBRATES (cont.)	
Birds (cont.)	
Lanius ludovicianus†	loggerhead shrike
Sayornis nigricans	black phoebe
Sturnella neglecta	western meadowlark
Zenaida macroura	mourning dove
Mammals	
Canis latrans	coyote
Spermophilus beecheyi	California ground squirrel
Sylvilagus bachmani	brush rabbit

*Non-native species
†Sensitive species
‡Observed by URS during surveys for State Route 11

APPENDIX C

SENSITIVE PLANT SPECIES OBSERVED OR WITH POTENTIAL TO OCCUR

Appendix C
SENSITIVE PLANT SPECIES OBSERVED
OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK

SPECIES	LISTING OR SENSITIVITY*	POTENTIAL TO OCCUR
San Diego thorn-mint (*Acanthomintha ilicifolia*)	FT/SE CNPS List 1B.1 County Group A	Low. Occurs on friable clay soils, often in open areas within grasslands. Although suitable habitat occurs on site, would likely have been observed during vernal pool surveys if present.
Shaw's agave (*Agave shawii*)	--/-- CNPS List 2.1 County Group B	Low. Occurs in coastal sage scrub and coastal bluff scrub. Suitable habitat does not occur on site.
San Diego ambrosia (*Ambrosia pumila*)	FE/-- CNPS List 1B.1 County Group A	Low. Generally found along creeks or seasonal drainages along the periphery of willow riparian areas. Habitat on site is only marginally suitable.
Golden-spined cereus (*Bergerocactus emoryi*)	--/-- CNPS List 2.2 County Group B	Very low. Generally found in maritime succulent scrub, which does not occur on site.
Orcutt's brodiaea (*Brodiaea orcuttii*)	--/-- CNPS List 1B.1 County Group A	Low. Occurs in vernal pool communities and ephemeral streams and seeps in Riverside and San Bernardino counties south to Baja. Would have been observed during vernal pool surveys if present.
Dunn's mariposa lily (*Calochortus dunnii*)	--/SR CNPS List 1B.2 County Group A	Low. Typically occurs in chaparral growing on metavolcanic or gabbro soils. The site is below elevation range of this species and lacks appropriate habitat.
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	--/-- CNPS List 2.2 County Group B	Very low. Occurs in coastal and maritime chaparral communities. Suitable conditions do not occur on site.
Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)	--/-- CNPS List 1B.2 County Group A	None. A conspicuous shrub occurring in chaparral, which does not occur on site. Would have been observed if present.
Small-flowered morning-glory (*Convolvulus simulans*)	--/-- CNPS List 4.2 County Group D	Observed in northern portion of site. Habitat is friable clay soils in open areas within coastal sage scrub, chaparral, or grasslands.
Orcutt's bird's-beak (*Cordylanthus orcuttianus*)	--/-- CNPS List 2.1 MSCP Covered County Group B	Low. Annual species occurring in seasonal drainages and scrub communities adjacent to riparian areas. Suitable habitat does not occur on site.
Tecate cypress (*Cupressus forbesii*)	--/-- CNPS List 1B.1 County Group A	None. Evergreen tree occurring in southern mixed chaparral and cypress forest. Suitable habitat does not occur on site. Would have been observed if present.

Appendix C (cont.)
SENSITIVE PLANT SPECIES OBSERVED OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK

SPECIES	LISTING OR SENSITIVITY*	POTENTIAL TO OCCUR
Otay tarplant (*Deinandra conjugens*)	FT/SE CNPS List 1B.1 County Group A	Low. Occurs on friable clay soils in grasslands or very open coastal sage scrub. Although grasslands and clay soils occur on site, this species was not detected during rare plant surveys.
Western dichondra (*Dichondra occidentalis*)	--/-- CNPS List 4.2 County Group D	Very low. Found in chaparral, coastal sage scrub, and among rocky outcrops in grasslands. Suitable habitat does not occur on site,
Orcutt's dudleya (*Dudleya attenuata* ssp. *orcuttii*)	--/-- CNPS List 2.1 County Group B	Low. Found in coastal sage scrub openings, typically in coastal situations. Suitable habitat does not occur on site.
Variegated dudleya (*Dudleya variegata*)	--/-- CNPS List 1B.2 County Group A	Occurs in south-central portion of site. Grows on rocky clay soils in grasslands, sage scrub, and chaparral.
Palmer's goldenbush (*Ericameria palmeri* ssp. *palmeri*)	--/-- CNPS List 2.2 County Group B	Very low. Typically occurs in chaparral and along coastal drainages. A large shrub that would likely have been detected if present on site.
San Diego button-celery (*Eryngium aristulatum* ssp. *parishii*)	FE/SE CNPS List 1B.1 County Group A	Observed within a vernal pool in the eastern portion of the site. Typical habitat is on the periphery of vernal pools and in areas with mima mound topography.
San Diego barrel cactus (*Ferocactus viridescens*)	--/-- CNPS List 2.1 County Group B	Observed on the hill in the south-central portion of the site. Generally found on Diegan coastal sage scrub hillsides, often at the crest of slopes among cobbles; occasionally found on the periphery of vernal pools and mima mounds
Chocolate lily (*Fritillaria biflora*)	--/-- not CNPS listed County Group D	Observed on the hill in the southern portion of the site. Typically found in native or non-native grasslands, as well as openings within sage scrub and chaparral, or native perennial grasslands, often in areas with clay soils.
Palmer's grapplinghook (*Harpagonella palmeri*)	--/-- CNPS List 4.2 County Group B	Low to moderate. Occurs on grassy slopes and open coastal sage scrub with clay soil. Would have been observed if present.
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	--/-- CNPS List 4.2 County Group D	Moderate. Generally found in grasslands and very open scrublands. Reported to occur in scattered locations in O'Neal Canyon to the east. Potentially suitable habitat occurs on site.

Appendix C (cont.)
SENSITIVE PLANT SPECIES OBSERVED
OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK

SPECIES	LISTING OR SENSITIVITY*	POTENTIAL TO OCCUR
San Diego marsh-elder (*Iva hayesiana*)	--/-- CNPS List 2.2 County Group B	Observed along the drainage in the northeastern portion of the site. Typical habitat includes intermittent streambeds with open riparian canopy, allowing substantial sunlight to penetrate; often found on sandy alluvial embankments with cobbles.
Heart-leaved pitcher sage (*Lepechinia cardiophylla*)	--/-- CNPS List 1B.2 County Group A	Low. Occurs in thick chaparral and known in California from only 10 sites. Would have been observed if present.
Gander's pitcher sage (*Lepechinia ganderi*)	--/-- CNPS List 1B.3 MSCP NE County Group A	Low. Occurs on metavolcanic soils in chaparral. Suitable conditions do not occur on site.
Willowy monardella (*Monardella linoides* ssp. *viminea*)	FE/SE CNPS 1B.1 County Group A	Very low. Typically occurs in riparian scrub, and sometimes chaparral or coastal sage scrub associated with drainages. Would likely have been observed if present.
San Diego goldenstar (*Muilla clevelandii*)	--/-- CNPS List 1B.1 County Group A	Moderate. Generally grows on clay soils in grasslands, often in association with mima mounds and vernal pools. Marginally suitable habitat occurs on site. Reported to the east of the project site.
Little mousetail (*Myosurus minimus* ssp. *apus*)	--/-- CNPS List 3.1 County Group A	Low. Occurs in vernal pool communities, typically in deeper areas. Although vernal pools occur on site, their disturbed state provides little suitable habitat for this species.
Spreading navarretia (*Navarretia fossalis*)	FT/-- CNPS List 1B.1 County Group A	Observed in one vernal pool in the eastern portion of the site.
Dehesa bear grass (*Nolina interrata*)	--/SE CNPS List 1B.1 County Group A	Low. Occurs in mafic chaparral such, often with gabbroic soils. Suitable habitat does not occur on site.
Snake cholla (*Opuntia californica* var. *californica*)	--/-- CNPS List 1B.1 County Group A	Low. Chaparral and coastal sage scrub from Point Loma south to Chula Vista and Baja. Although historically reported on Otay Mesa, not known from the project vicinity.
California Orcutt grass (*Orcuttia californica*)	FE/SE CNPS List 1B.1 County Group A	Low. Occurs in vernal pool communities. Would likely have been observed during vernal pool or rare plant surveys if present.

Appendix C (cont.)
SENSITIVE PLANT SPECIES OBSERVED OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK

SPECIES	LISTING OR SENSITIVITY*	POTENTIAL TO OCCUR
Short-lobed broomrape (*Orobanche parishii* ssp. *brachyloba*)	--/-- CNPS List 4.2 County Group A	None. Occurs on sandy substrates in coastal bluff scrub and coastal dunes. Appropriate habitat does not occur on site.
Otay Mesa mint (*Pogogyne nudiuscula*)	FE/SE CNPS List 1B.1 County Group A	Low. Occurs in Otay Mesa vernal pool communities. Would likely have been observed during vernal pool or rare plant surveys if present.
Nuttall's scrub oak (*Quercus dumosa*)	--/-- CNPS List 1B.1 County Group A	Low. A conspicuous shrub occurring in chaparral and coastal sage scrub. Suitable habitat does not occur on site. Would have been observed if present.
Munz's sage (*Salvia munzii*)	--/-- CNPS List 2.2 County Group B	Moderate. A shrub that occurs in coastal sage scrub and chaparral below 1,500 feet. Suitable shrub habitat does not occur on site.
Ashy spike-moss (*Selaginella cinerascens*)	--/-- CNPS List 4.1 County Group D	Present. This species was recorded in one location in the south-central portion of the site.
Parry's tetracoccus (*Tetracoccus dioicus*)	--/-- CNPS List 1B.2 County Group A	Very low. Occurs in low, moderately dense chamise chaparral. Suitable habitat does not occur on site.

*Refer to Appendix E for a listing and explanation of status and sensitivity codes

APPENDIX D

SENSITIVE ANIMAL SPECIES OBSERVED OR WITH POTENTIAL TO OCCUR

Appendix D SENSITIVE ANIMAL SPECIES OBSERVED OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK		
SPECIES	**LISTING OR SENSITIVITY***	**POTENTIAL TO OCCUR**
INVERTEBRATES		
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	FE/-- County Group 1 MSCP Covered MSCP Rare, NE	Observed in one vernal pool and nine road pools on site. Typical habitat includes seasonal pools that occur in tectonic swales or earth slump basins and other areas of shallow and standing water, often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE/-- County Group 1 MSCP Rare, NE	Observed in 2005 within non-native grassland on site. Typical habitat includes open sage scrub or grassland with areas of dwarf plantain.
Harbison's dun skipper (*Euphyes vestris harbisoni*)	--/-- County Group 1	Low. Host plant San Diego sedge (*Carex spissa*) not observed on site.
Hermes copper (*Lycaena hermes*)	--/-- County Group 1	Low. Host plant spiny redberry (*Rhamnus crocea*) not observed on site.
Thorne's hairstreak (*Mitoura thornei*)	--/-- County Group 1	Low. Closely associated with food plant Tecate cypress (*Cupressus forbesii*) and closed cone forest habitats. Appropriate habitat does not occur on or near the site.
Riverside fairy shrimp (*Streptocephalus woottoni*)	FE/-- County Group 1	Observed in one vernal pool and two road pools on site. Typically occurs in deep vernal pools and seasonal wetlands.
VERTEBRATES		
Amphibians and Reptiles		
Silvery legless lizard (*Anniella nigra argentea*)	--/SSC County Group 2	Low. Burrows in loose soils, sandy washes, or leaf litter. Occurs in moist habitats of chaparral, pine, and oak woodlands, and riparian streamside growth. Appropriate habitat limited on site.
Arroyo toad (*Bufo californicus*)	FE/SSC County Group 1	None. Found in washes, streams, and arroyos in semiarid areas. Prefer shallow pools and open, sandy stream terraces or sand bars with cottonwoods, willows, or sycamores. Suitable habitat does not occur on site.
Orange-throated whiptail (*Aspidoscelis hyperythra*)	--/SSC County Group 2	Low to moderate. Prefers scrub habitats with patches of brush and rocks for cover. Project site is dominated by grasslands and suitable shrub cover is not present.

Appendix D (cont.) **SENSITIVE ANIMAL SPECIES OBSERVED** **OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK**		
SPECIES	**LISTING OR SENSITIVITY***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Amphibians and Reptiles (cont.)		
Red-diamond rattlesnake (*Crotalus rubber ruber*)	--/SSC County Group 2	Low. Occurs in coastal sage scrub and chaparral with abundant rocky outcrops. Suitable conditions do not occur on site.
Coronado skink (*Eumeces skiltonianus interparietalis*)	--/SSC County Group 2	Low to moderate. Occurs in grassland, scrublands, and cismontane woodlands with abundant leaf litter. Marginally suitable habitat occurs on site.
Coastal rosy boa (*Charina trivirgata*)	--/SSC County Group 2	Low. Generally occurs in coastal sage scrub, particularly where rock outcrops are common. Suitable scrub habitat does not occur on site.
Coast horned lizard (*Phrynosoma coronatum*)	--/SSC County Group 2	Low to moderate. Prefers friable, rocky, or shallow soils in coastal sage scrub or chaparral. Require the presence of primary food source, harvester ants (*Pogonomyrmex* sp.). Suitable scrub habitat does not occur on site.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	--/SSC County Group 2	Low. Found in coastal sage scrub, chaparral, riparian, grasslands, and agricultural fields (Zeiner et al. 1988). Prefers open habitats with friable or sandy soils, burrowing rodents for food, and enough cover to escape being preyed upon. Shrub cover on site likely too sparse to support this species.
Western spadefoot toad (*Spea hammondii*)	--/SSC County Group 2	Observed in two vernal pools and one road pool on site. Typical breeding habitat is open sage scrub, chaparral, or grasslands where there are temporary pools and friable soils.
Two-striped garter snake (*Thamnophis hammondii*)	---/SSC County Group 1	Observed in a drainage off site along the northern property boundary. Typical habitat is along permanent and intermittent streams bounded by dense riparian vegetation; also found in vernal pools and stock ponds.

Appendix D (cont.) **SENSITIVE ANIMAL SPECIES OBSERVED** **OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK**		
SPECIES	**LISTING OR SENSITIVITY***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Birds		
Cooper's hawk (*Accipiter cooperii*)	--/WL County Group 1	Low to moderate. Tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrublands or fields. Although no suitable nesting habitat occurs on site, foraging habitat is abundant.
Tricolored blackbird (*Agelaius tricolor*)	BCC/SSC County Group 1	Low. Occurs mostly in coastal lowland grasslands and wetlands. Would have been observed if present.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	--/WL County Group 1	Low. Occurs in coastal sage scrub on rocky hillsides and in canyons; also found in open sage scrub/grassy areas of successional growth. Suitable scrub habitat does not occur on site.
Grasshopper sparrow (*Ammodramus savannarum*)	--/SSC County Group 1	Observed in the center of the site within non-native grassland. Typical habitat is dense grasslands that have little or no shrub cover.
Bell's sage sparrow (*Amphispiza belli belli*)	--/SSC County Group 1	Very low. Occurs in sunny, dry stands of coastal sage scrub or chaparral. Suitable scrub habitat does not occur on site.
Golden eagle (*Aquila chrysaetos*)	BCC; BGEPA/WL; Fully Protected MSCP Rare, NE County Group 1	Observed flying over the site. Typical foraging habitat includes grassy and open, shrubby habitats. Generally nests on remote cliffs; requires areas of solitude at a distance from human habitation
Burrowing owl (*Athene cunicularia*)	BCC/SSC MSCP Rare, NE County Group 1	Six occupied burrows and two individuals were observed on site. Typical habitat is grasslands, open scrublands, agricultural fields, and other areas where there are ground squirrel burrows or other areas in which to burrow.
Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegonensis*)	BCC/SSC County Group 1	Very low. Occurs in coastal sage scrub with large cacti for nesting. No suitable habitat occurs on site.

Appendix D (cont.) **SENSITIVE ANIMAL SPECIES OBSERVED** **OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK**		
SPECIES	**LISTING OR SENSITIVITY***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Birds (cont.)		
Northern harrier (*Circus cyaneus*)	--/SSC County Group 1	Observed over the central portion of the site. Typical habitat includes grasslands, meadows, marshlands, and prairies.
White-tailed kite (*Elanus leucurus*)	--/Fully Protected County Group 1	Observed over the central portion of the site. Typical nesting habitat includes riparian woodlands and oak and sycamore groves. Foraging occurs over grassland habitats.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE/SE County Group 1	None. Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons. Migrants may be found among other shrubs in wetter areas. Suitable habitat does not occur on site.
California horned lark (*Eremophila alpestris actia*)	--/WL County Group 2	Observed just below the eastern slopes of the hill in the southern portion of the site. Typical habitat includes sandy beaches, agricultural fields, grassland, and open areas.
Prairie falcon (*Falco mexicanus*)	BCC/WL County Group 1	Low to moderate. Nests on cliffs or bluffs and forage over open desert scrub or grassland. Although potential foraging habitat occurs on site, it is largely disturbed and urbanized.
Peregrine falcon (*Falco peregrinus*)	Delisted; BCC/SE; Fully Protected County Group 1	Low. Rare fall and winter visitor. Prefers various coastal habitats for foraging and breeding.
Loggerhead shrike (*Lanius ludovicianus*)	--/SSC County Group 1	Observed in disturbed habitat in the southeastern portion of the site. Typical habitat includes open habitats including grasslands, shrublands, and ruderal areas with adequate perching locations.
Long-billed curlew (*Numenius amaericanus*)	BCC/WL County Group 2	Very low. Occurs on tidal mudflats and open coastal grassland. Grasslands on site are largely unsuitable.

Appendix D (cont.) **SENSITIVE ANIMAL SPECIES OBSERVED** **OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK**		
SPECIES	**LISTING OR SENSITIVITY***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Birds (cont.)		
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/SSC County Group 1	Very low. Generally occurs in coastal sage scrub and very open chaparral. No suitable scrub habitat occurs on site.
Least Bell's vireo (*Vireo bellii pusillus*)	BCC/SE County Group 1	None. Prefers riparian woodland forest and is most frequent in dense, young willows, or mule fat understory areas with a canopy of tall willows. Currently restricted to major river systems in San Diego County. Suitable habitat does not occur on site.
Mammals		
Pallid bat (*Antrozous pallidus pacificus*)	--/SSC County Group 2	Low. Roosts in caves, mines, bridges, crevices, and abandoned buildings and trees. Appropriate roosting habitat absent. Could forage throughout the site, but few potential roosting sites exist.
California pocket mouse (*Chaetodipus californicus femoralis*)	--/SSC County Group 2	Very low. Occurs in coastal sage scrub, chaparral, grasslands, and woodland habitats up to 7,900 feet. Suitable habitat does not occur on site.
San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC County Group 2	Low. Found in open areas of coastal sage scrub and weedy growth, often on sandy substrates. Although weedy grassland is abundant, suitable scrub cover is absent.
Spotted bat (*Euderma maculatum*)	--/SSC County Group 2	Very low. Roost in cliff cracks and outcrops; forage over open marshlands. No suitable roosting or foraging habitat occurs on site.
Greater western mastiff bat (*Eumops perotis californicus*)	--/SSC County Group 2	Very low. Roosts in crevices in cliff faces, and presence strongly tied to large (100 feet long or more) ponds for drinking. No suitable foraging or roosting habitat occurs on site.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	--/SSC County Group 2	Low to moderate. Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present. Grassland is abundant on site, but shrubs are scarce.

Appendix D (cont.) **SENSITIVE ANIMAL SPECIES OBSERVED** **OR WITH POTENTIAL TO OCCUR – OTAY BUSINESS PARK**		
SPECIES	**LISTING OR SENSITIVITY***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Mammals (cont.)		
Yuma myotis (*Myotis yumanensis*)	--/-- County Group 2	Very low. Occurs in arid areas where it roosts in buildings, mines, caves, and crevices, and forages over permanent water sources. No suitable roosting or foraging habitat occurs on site.
San Diego desert woodrat (*Neotoma lepida intermedia*)	--/SSC County Group 2	Very low. Occurs in open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca. No suitable shrub cover occurs on site.
Southern grasshopper mouse (*Onychomys torridus ramona*)	--/SSC County Group 2	Very low. Generally found in desert habitats with loose, friable soils. Less common in coastal scrub and chaparral. Suitable shrub cover does not occur on site.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE/SSC County Group 1	Low. Found in coastal sage scrub, but more often in sandy washes. Known currently from one location in Orange County and one on Camp Pendleton. Site outside of species' known range.
Townsend's big-eared bat (*Plecotus townsendii pallescens*)	--/SSC County Group 2	Very low. Typically roosts in caves and mines and forages for moths in forested areas. No suitable roosting or foraging habitat occurs on site.

*Refer to Appendix E for a listing and explanation of status and sensitivity codes

APPENDIX E

EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

Appendix E
EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

FEDERAL, STATE, AND LOCAL CODES

U.S. Fish and Wildlife Service (USFWS)

FE	Federally listed endangered
FT	Federally listed threatened
BCC	Birds of Conservation Concern (discussed in more detail, below)
BGEPA	Bald and Golden Eagle Protection Act (discussed in more detail below)

California Department of Fish and Game (CDFG)

SE	State listed endangered
SR	State listed rare
ST	State listed threatened
SSC	State species of special concern
WL	Watch List

Fully Protected — Fully Protected species refer to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFG.

County of San Diego

Plant sensitivity:

Group A	Plants rare, threatened, or endangered in California or elsewhere
Group B	Plants rare, threatened, or endangered in California but more common elsewhere
Group C	Plants that may be quite rare, but more information is needed to determine rarity status
Group D	Plants of limited distribution and are uncommon, but not presently rare or endangered

Animal sensitivity:

County Sensitive — Animals considered under California Environmental Quality Act (CEQA) review of projects.

Multiple Species Conservation Program (MSCP) Covered

Multiple Species Conservation Program covered species for which the County has take authorization within the MSCP area.

MSCP Narrow Endemic (NE)

Narrow endemic species are native species that have "restricted geographic distributions, soil affinities, and/or habitats." The MSCP participants' subarea plans have specific conservation measures to ensure impacts to narrow endemics are avoided to the maximum extent practicable.

OTHER CODES AND ABBREVIATIONS

USFWS Bald and Golden Eagle Protection Act (BGEPA)

In 1782, Continental Congress adopted the bald eagle as a national symbol. During the next one and a half centuries, the bald eagle was heavily hunted by sportsmen, taxidermists, fisherman, and farmers. To prevent the species from becoming extinct, Congress passed the Bald Eagle Protection Act in 1940. The Act was extremely comprehensive, prohibiting the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald eagle "at any time or in any manner."

In 1962, Congress amended the Eagle Act to cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. The golden eagle, however, is accorded somewhat lighter protection under the Act than the bald eagle. Another 1962 amendment authorizes the Secretary of the Interior to grant permits to Native Americans for traditional religious use of eagles and eagle parts and feathers.

USFWS Birds of Conservation Concern (BCC)

This report from 2002 aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities and draw attention to species in need of conservation action. USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. The report is available online at http://migratorybirds.fws.gov/reports/bcc2002.pdf.

OTHER CODES AND ABBREVIATIONS (cont.)

California Native Plant Society (CNPS) Codes

Lists

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 – Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly endangered in California (20 to 80 percent occurrences threatened)

.3 – Not very endangered in California (less than 20 percent of occurrences threatened, or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.